

P
Sci
B

Belfast Naturalists' Field Club 20-12-22
111 10-10

ANNUAL REPORT

... AND ...

PROCEEDINGS.

STORAGE

THE ROYAL CANADIAN INSTITUTE

SERIES II.

VOL. VIII.



PART IV.

1921-22

For Contents See Back of Cover



PRINTED FOR MEMBERS ONLY.

PRICE OF EXTRA COPIES TO MEMBERS, 2/-.

CONTENTS.

List of Officers, 1921-22	141
Annual Report	143
Statement of Accounts	148
Excursions :—Belvoir Park, Gobbins, Ardglass, Downpatrick, Galgorm Castle, Monlough, Knockagh, Dromore	
Papers :—“The Comber Estuary ”—S. A. Bennett, B.A., B.Sc.	161
“The Art of Burial ”—C. Bulla.	164
“The Club's Activities ”—	167
“At Home with Fur and Feather ”—E. A. Armstrong, B. A.	178
“Spiderland ”—J. A. S. Stendall, M.B.O.U.	181
“Radio-Activity in Relation to Geology ”—J. C. A. Brierley, M.Sc.	183
“Birds: Extinct and Living ”—N. H. Foster, F.L.S., M.R.I.A., M.B.O.U.	187
Conversazione	184
Annual Meeting	189
Rules	191
Exchange of Proceedings	195
List of Members	199

ANNUAL REPORT AND PROCEEDINGS.
OF THE
BELFAST NATURALISTS'
FIELD CLUB,

FOR THE YEAR ENDING 31st MARCH, 1922.

(FIFTY-NINTH YEAR.)

SERIES II.

VOLUME VIII.



PART IV.

1921-22.

Joint Editors :
S. A. BENNETT, B.A., B.Sc.
A. M'L. CLELAND.

Belfast :
PRINTED AT "THE NORTHERN WING" OFFICES, VICTORIA STREET

1922.

Annual Report.

YOUR COMMITTEE has pleasure in submitting the Fifty-ninth Annual Report, as follows :—

During the year 1 Honorary, 167 Ordinary, 2 Associate, and 1 Junior Member have been elected; 16 have resigned and 8 have died. The total membership on 31st March, 1922, is therefore 456 as against 309 recorded in the last report, a gratifying increase of 147 Members, and a result very largely due to the energy of the Hon. Treasurer. The composition of the membership is now:—7 Honorary, 1 Corresponding, 2 Life, 435 Ordinary, 2 Associate, and 9 Junior.

Your Committee greatly regret the decease during the year of the following Members :—1 Life, 6 Ordinary, and 1 Associate. A list of their names will be found at the end of the Report.

Twelve Committee meetings have been held during the year, at which the attendances were as follows :—

S. A. Bennett	...	...	9	W. M. Crawford	...	...	8
Rev. W. R. Megaw	...	...	5	J. R. H. Greeves	...	...	5
T. E. Osborne	...	...	12	W. C. Boyd	...	...	2
D. Kennedy	...	...	2	A. R. Hogg	...	...	0
W. Porter	...	...	7	R. May	...	...	1
R. Bell	...	...	8	N. Carrothers	...	...	8
J. A. S. Stendall	...	...	10	Dr. T. M. Deans	...	...	6
Rev. W. P. Carmody	...	...	1	D. Elliott	...	...	6
Dr. A. R. Derryhouse	...	...	1	A. M ^l . Cleland	...	...	10
S. M. Macoun	...	...	10				

On the resignation of Mr. D. Kennedy from the position of Hon. Librarian, in January, 1922, the Committee co-opted Mr. W. M. Crawford, B.A., I.C.S., F.F.S., to the vacancy.

The programme of Summer Excursions was carried out almost in its entirety, the proposed excursion to Woodburn Glen having to be abandoned owing to the Glen being in military occupation. The places visited and members present were as follows :—

Belvoir Park	...	21st May	...	71	Present.
The Gobbins	...	4th June	...	50	„
Ardglass	...	18th June	...	14	„
Downpatrick	...	2nd July	...	54	„
Galgorm Castle	...	30th July	...	59	„
Monlough	...	27th August	..	39	„
Knockagh	...	10th Sept.	...	48	„
Dromore	...	24th Sept.	...	47	„

A very successful *Conversazione* was held on the 28th March, in the Carlton Hall, 160 Members being present, the exhibits, as usual, proving most interesting and varied.

During the Winter Session the following papers were read, of which abstracts will be found in the Proceedings :—

1921.

October 25th—"The Comber Estuary," S. A. Bennett, B.A., B.Sc.

November 15th—"The Art of Burial," C. Bulla.

December 20th—"At Home with Fur and Feather," E. A. Armstrong.

1922.

January 17th—"Spiderland," J. A. S. Stendall, M.B.O.U.

February 21st—"Radio Activity in Relation to Geology," J.C.A. Brierley, M.Sc.

March 21st—"Birds: Extinct and Living," N. H. Foster, F.L.S., M.R.I.A., M.B.O.U.

All the above subjects were well illustrated by lantern views, the attendances of members being very good.

In June your Committee appointed Mr. S. A. Bennett, B.A., B.Sc., Delegate to the British Association Meetings, in Edinburgh, in the ensuing September. The subsequent report of the Delegate was submitted to a Sectional Meeting of the Club, held on the 29th November; an abstract is included in the Proceedings.

On the visit of the King to Belfast on 22nd June, the Committee decided that an Address should be presented to His Majesty in the following terms :—

Address to the King

TO HIS MOST GRACIOUS MAJESTY GEORGE THE FIFTH,
of the United Kingdom of Great Britain and Ireland and of
the British Possessions beyond the Seas, King, Emperor of
India.

May it please your Majesty,

WE, the President and Committee of the Belfast Naturalists' Field Club, desire on behalf of the Club to offer our most respectful, dutiful, and loyal welcome to the City of Belfast.

Knowing the great interest your Majesty has invariably taken in all branches of scientific research, we feel a pride in being permitted to approach your Majesty, as the Premier Field Club of Ireland and the one with the largest membership. Our Club was founded on the 6th of March, 1863, and has contributed in no small degree to the advancement of Science in this portion of your Majesty's Kingdom during the fifty-eight years that have elapsed.

We sincerely hope that your Majesty may be long spared in health and strength, to reign over a happy, united and prosperous people.

Signed on behalf of the Belfast Naturalists' Field Club.

S. A. BENNETT, B.A., B.Sc., President.

A. M'I. CLELAND, Hon. Secretary.

22nd June, 1921.

The Hon. Treasurer will lay before you his Statement of Accounts, while the Hon. Librarian, and the Hon. Secretary for the Junior Section will present their Reports.

In conclusion, your Committee desire to tender their hearty thanks to:—The Right Hon. Sir James Johnston, J.P., of Belvoir Park; the Right Hon. W. R. Young, D.L., of Galgorm Castle; Canon J. W. Cooke, of Dromore Cathedral; Mr. F. J. Bigger, M.R.I.A., of Ardglass; and Mr. G. M'Williams, of Ballyknockan, for their kindness and hospitality extended to members of the Club on the Summer Excursions; to Mr. F. W. Henry for the use of the Carlton Hall; to the Press for publishing reports of the Excursions and Meetings; to the Superintendents of the Railway Companies; and to the Kindred Societies and Public Institutions who have favoured us with their publications.

(Signed) S. A. BENNETT, B.A., B.Sc.

A. M'L. CLELAND, Hon. Secretary.

9th April, 1922.

Hon. Librarian's Report.

The Library has perhaps been used to about the usual extent, but I fear this is not saying very much. A quantity of most useful and interesting literature is received from exchanging Societies, and it seems to me a very great loss that no ready means are available for giving Members a chance of seeing what comes in. A room where all recently received Reports and Proceedings could be exposed for the easy inspection of Members would be a great boon.

A list of exchanges with other Clubs and Societies will be found on another page.

A copy of Vol. VII. (Series II.) of our own Proceedings has been bound for permanent reference in the Library.

Some interesting photographs have been presented to the Club by Mr. R. J. Welch, M.R.I.A.

(Signed) W. M. CRAWFORD, Hon. Librarian

Report of the Junior Section.

The Junior Section has had a reasonably successful winter

season considering the lethargic state it was in at the end of last summer. At a meeting of the Section Committee held last autumn it was decided to try and draw the Members together by means of a "tea." Invitations were accordingly sent out, and as a result we had quite a number of keen young people for a very enjoyable evening at the Museum. The thanks of the Committee are due to the ladies who very kindly provided the tea and helped to dispense it. After tea a short talk was given by the Chairman, Mr. S. A. Bennett, B.A., B.Sc.

Owing to a variety of causes, we have only had one meeting since then, at which, in the unavoidable absence of the President, who was to have given a lecture on "Wildflowers," plans for the Summer excursions were discussed, and several suggestions made with regard to Junior exhibits at the *Conversazione*. As a result we had a very promising exhibit which speaks well for the future of the Section and the Club: the objects of interest displayed comprising a very wide range indeed.

We hope that the Summer, now that we have really got going, will be even more successful, and that we may be able to lay the foundations of a really useful Junior Section.

(Signed) J. R. H. Greeves, *Hon. Sec.*

Deceased Members.

Sir Robert Anderson, Bart., J.P.

Mr. John Doran, J.P.

Mr. Joseph Galloway.

Mr. Edmund Foster Green.

Mr. D. C. Patterson.

Mr. Burton Sefton.

Mr. W. J. C. Tomlinson.

Mr. R. L. Woolcombe, M.A., LL.D.

Dr. **Hon. Treasurer's Account for the Year ending 31st March, 1922.** **Cr.**

<i>RECEIPTS.</i>		<i>PAYMENTS.</i>	
To Balance	£7 10 11	By Printing of Proceedings	£31 7 6
" " 1921 Conversazione	0 4 6	" Printing and Stationery	29 7 10
" Subscriptions	115 12 6	" Hire of Rooms	5 13 0
" Balance from Excursions	6 6 5	" " Lantern	7 10 0
" Refund	0 7 0	" Fire Insurance	0 10 0
" Sales of "Flora," &c.	3 15 7	" " Irish Naturalist "	2 0 0
" Balance 1922 Conversazione	2 1 9	" " Do.	3 0 0
		" Gratitudes	1 10 0
		" Delegate to British Association	3 3 0
		" Incidental Expenses	0 18 2
		" Addressing Circulars, &c.	5 12 6
		" Postage	30 16 1
		" Address to H.M. the King	6 19 3
		" Commission to Collector	0 5 0
		" Re-lettering the late Mr. S. A. Stewart's grave	3 10 0
		" Balance carried forward	0 16 4
	<u>£135 18 8</u>		<u>£135 18 8</u>

T. EDENS OSBORNE, *Hon. Treasurer.*

War Saving Certificates for £62 and £25 towards publishing a new "Flora of the North-East"

Examined and found correct by us,

S. M. MACCOUN, } *Hon. Auditors.*
W. M. CRAWFORD, }

Proceedings.

SUMMER SESSION,

BELVOIR PARK.

Date—21st May, 1921. Conductor—Rev. W. R. Megaw, B.A. †
Number present, 71.

The members assembled at the Ormeau Road tram terminus, at three o'clock, for the purpose of exploring Belvoir Park, permission to visit which having been very kindly granted by the Right Hon. Sir James Johnston, J.P.

Belvoir Park was looking its best, and the weather was all that could be desired, so that the botanical work effected was of a high order. The Park has always been a happy hunting ground for the Club botanists, and on this occasion it is pleasant to record that all the plants which were known to grow in the demesne were found in a flourishing condition. Amongst them may be noted the Bitter-cress *Cardamine amara* L. and the Greater Pond-sedge *Carex riparia* Curt. Two specimens of the Bird's-nest Orchid *Neottia Nidus-avis* Rich.—a rare plant with us—were found, and the Adder's-tongue fern *Ophioglossum vulgatum* L. was seen in profusion. The members greatly admired the profuse display of blooms in the rock and winter gardens.

Tea was partaken of in the open at five o'clock, after which the election of 27 new members was proceeded with. The appreciation of the members for the kindness of the Right Hon. Sir James Johnston having been suitably expressed by the President (Mr.

S. A. Bennett, B.A., B.Sc.) the meeting broke up, the majority following the Conductor on the return journey, though some enthusiasts lingered considerably longer.

THE GOBBINS.

Date—4th June, 1921. Conductor—Dr. A. R. Dwerryhouse, D.Sc., F.G.S.,
M.R.I.A. Number present, 50.

The neighbourhood of the Gobbins is always popular with the Club, and it was looking its best under the fascinating weather conditions which prevailed on the above date.

At a spot half-way to the Gobbins Head the Conductor gathered the party together and gave a clear, concise, and very interesting description of the principal geological points of the locality. Fortunately the tide was low and the members were thus able to trace the Liassic beds (covered at high water), thence through Greensands, Chloritic Chalk passing into true Chalk, capped in its turn by Basalts, the latter covered by Glacial Drift in the form of boulder clay.

Several characteristic fossils having been obtained the party moved on to the Gobbins Head, a natural feature which gives such a good example of the flow structure of the Basalts. Some of the flows are almost columnar in their nature, others are splendid examples of amygdoloidal Basalt studded on every conceivable portion with zeolites sparkling in the sunlight. Here and there red layers of bole show where pauses in the lava flows allowed sufficient time for denudation to take place.

At the business meeting held during the excursion eleven new members were elected, this bringing the total of new members elected since the Session opened to eighty, a number testifying to the continued healthy growth of the Club, the only Naturalists Field Club in the North of Ireland.

ARDGLASS.

Date—18th June, 1921. Conductor—S. A. Bennett, B.A., B.Sc.
Number present, 14.

The early start of 7-30 a.m., and high rail fare no doubt were the causes of so small an attendance. Nine Members journeyed down by train; one Member motored from Newtownards and joined at Ardglass; Mr. and Mrs. W. A. Green met the party at Ardtole Church, and at Castle Shean the party was completed by Mr. F. J. Bigger and Mr. D. Kennedy. The weather throughout the day was magnificent.

The route followed was round Phennick Point to St. Patrick's Well. Here lunch was partaken of and the party was photographed by Mr. T. E. Osborne and the Hon. Secretary.

On the way to the Well the geologists came across many fine examples of vertically tilted strata of Silurian grits, the rocks running in some places well out to sea, and giving a picture of the terrible nature of the coast in times of storm. On the way to the Point an interesting cave was observed, the roof formed of calcreted glacial gravel resting on very much inclined beds of Silurian grit.

At Chapelstown a halt was made to examine the fine Anglo-Norman grave-slab, originally brought from Ardtole Church, and now built into the wall of Dunsford Chapel.

Passing on, the party halted again at the "Cross of Ardtole," a small mound resembling a grave with blocks of grit arranged upon it in the form of the spots on a 'five' of a pack of cards. Nothing is known concerning this monument.

A much longer halt was made at Ardtole Church, once the ancient church of St. Nicholas, standing on the summit of the commanding Hill of Ardtole. The east wall, containing a large arched window which looks over the sea, still remains, as well as the side walls. Here the Conductor gave an interesting account of the history of the structure, and also its restoration and repair,

the latter a work largely due to the initiative of Mr. F. J. Bigger, M.R.I.A.

Here Mr. and Mrs. Green joined the party and very kindly placed their car at the disposal of the Members, taking them in relays to Castle Shean, in Ardglass town, where Mr. Bigger had tea ready, an attention very greatly appreciated.

Castle Shean, under the occupation of Mr. Bigger, has become a most interesting museum of Irish ethnographical objects, so numerous and detailed that the Members regretted lack of time prevented full justice being done to them.

Among the more remarkable plants noticed by the botanists during the day were the following :—Brookweed *Samolus Valerandi*, L.; Sea Samphire *Crithmum maritimum*, L.; Vernal Squill *Scilla verna*, Huds., in fruit : Marsh Orchid *Orchis latifolia*, L.; Spotted Orchid *Orchis maculata*, L.; Common Centaury *Erythraea Centaurium*, Pers., both pink and white, etc.

DOWNPATRICK.

Date—2nd July, 1921. Conductor—S. A. Bennett, B.A., B.Sc.
Number present, 54.

The party started promptly at 10-30 a.m. in two motor charabancs, going directly from the Museum, College Square North, to Inch Abbey via Saintfield and Crossgar.

Lunch was taken immediately on reaching the Abbey, after which the President (who was acting as Conductor) gave a short and very interesting account of the history of the picturesque ruins. The Abbey was founded by Sir John De Courcey, three years after his arrival at Downpatrick from Dublin, for monks of the Cistercian order, the date of dedication being 3rd June, 1180.

The church of the Abbey is cruciform and has been recently restored by the Irish Board of Works. At the east end of the church are three beautiful lancet windows of early English design the most picturesque features of the ruins. The church was 170 ft. long with nave and aisles, and side chapels on the eastern sides.

of the transepts. Adjoining the church on the south side were the sacristy, chapter house, monks' day rooms, kitchen and refectory. The extent of the remains of these buildings shows that the Abbey was a place of very considerable importance in mediæval times. The architectural glories of the Abbey are faintly revealed by the scanty remains of the groined vaulting of the chapels and the bases of the pillars in the nave.

This was not the first church to be built on the site, an ancient church, beside which the abbey was erected, standing until recently in the middle of the adjoining cemetery. It has, however, been destroyed, nothing now remaining of it.

From Inch Abbey the party drove to Raholp, via Quoile Castle, in order to visit the little church standing on a low mound, apparently originally a rath, about 100 yards off the road. Here the Members were met by Mr. F. J. Bigger, M.R.I.A., who rapidly sketched the history of the building. Founded by St. Patrick, this venerable edifice is constructed of rough stones cemented with yellow clay instead of mortar. It measures about 33ft. x 21 ft. and has recently been very carefully restored by Mr. Bigger, largely at his own initiative and cost.

The next halt was at Lough Money Cromleac, a structure which differs from the type, inasmuch as the capstone rests on two stones only, which stand parallel on edge. The capstone is 12 ft. by 5 ft., and both it and the supports are rough blocks of Silurian grit.

From hence the motors took the Members to Ballyalton stone circle, a much ruined monument. Only about a quarter of the circle now remains, this consisting of upright slabs of grit, with an odd stone here and there to mark the positions of the rest.

From Ballyalton the Members were driven rapidly into Downpatrick and to the Cathedral, where the courteous verger (Mr. M^WWilliams) was in readiness, who took charge of the party and acted as a very efficient guide.

Tea was served at Denvir's Hotel, English Street, promptly at 5-45 p.m., after which, at the business meeting following, the President made feeling reference to the great loss the Club had sustained in the recent decease of Mr. W. J. C. Tomlinson, a Member of twenty years' standing and a botanist of great repute. The President proposed that a vote of condolence be forwarded to the late Mr. Tomlinson's family. This was seconded by Mr. N. Carrothers and passed in silence, the Members standing.

After three Senior Members and one Junior Member had been elected the meeting terminated.

At 7 p.m. the cars were mounted again for the last time, and the return journey began, the route going through Killyleagh and Comber, Belfast being reached about 8-30 p.m., when the Members dispersed in various directions, all agreeing that the Excursion had been one of the most successful in the Club's history.

GALGORM CASTLE, BALLYMENA.

Date—30th July, 1921. Conductor—Rev. W. R. Megaw, B.A.
Number present, 59.

This excursion would have been more enjoyable under better weather conditions which, though warm, were dull, with very heavy rain shortly after leaving Antrim. This continued without intermission all the way to Galgorm and back to Antrim, with another heavy shower when leaving the Round Tower. After that the weather was very bright, sunny and clear.

The party started from the Museum, College Square North, in two motor charabancs promptly at 10-30 a.m., journeying to Galgorm Castle via Lisburn, Glenavy, Antrim and Ballymena. On arriving at Galgorm the members found that, through the very thoughtful kindness of Mr. A. Raphael, the Girls' School Buildings had been thrown open, a bright fire lighted, and every preparation made for the comfort of the large party. Here lunch was taken, after which a short business meeting was held at which nine new members were elected, and the President (Mr. S. A. Bennett,

B.A., B.Sc.) informally voiced the appreciation of the members of the kindness of the Rt. Hon. W. R. Young, D.L., in allowing the Club to visit the Castle and Demesne. Subsequently Mr. Young sent a message in which he expressed his regret that he was not able, owing to the state of his health, to meet the members personally.

Before leaving the School Buildings the Vice-President (Rev. W. R. Megaw, B.A.), who was acting as Conductor, gave a short account of the somewhat nebulous history of Galgorm Castle.

The torrential rain cut short the visit to the Castle and the party was soon on board the charabancs again, en route for Antrim. Here tea was served in Hall's Hotel, High Street, promptly at 5.30 p.m., the comfortable meal and large fires proving very acceptable to all the party.

After tea the members visited the Round Tower, (by kind permission of Miss Clarke), and here the Rev. W. A. Adams, B.A., gave a short sketch on the subject of Round Towers in general and the Antrim Round Tower in particular, speaking in his usual happy manner.

After the party had been photographed by Mr. W. A. Green, (during an obliging glint of sunshine, as the members were about the Tower), the charabancs were mounted again, the party leaving Antrim promptly at 7 p.m., reaching Belfast without further delay at about 8 o'clock.

WOODBURN GLEN.

This excursion arranged for Saturday, 13th August, 1921, had to be abandoned owing to the Glen being in the possession of the Military.

MONLOUGH.

Date—27th August, 1921. Conductor—A. M'I. Cleland. Number present, 39.

The party left the Museum, College Square North, promptly at 2 p.m., and in fine weather, and thus were able to thoroughly

enjoy the beautiful drive to Carryduff, this part of the journey being made by motor charabanc.

On reaching the side of the lake the botanists dispersed on their various quests, meeting with a considerable amount of success, the following among other plants being noted:—Bur-Marigold *Bidens cernua* L.; Sneeze-wort *Achillea Ptarmica*, L.; Bur-reed, *Sparganium ramosum* Huds.; a solitary flowering specimen of the Buck-bean *Menyanthes trifoliata*, L.; Horse Mint *Mentha silvestris*, L.; Hairy Mint *Mentha hirsuta*, L.; Water Mint *Mentha aquatica*, L.; Whorled Mint *Mentha sativa* L.; Field Mint *Mentha arvensis*, L.; Marsh Cud-weed *Gnaphalium uliginosum*, L.; Common Hemp Nettle *Galeopsis tetrahit*, L.

The party reached the house of Mr. M'Williams at the foot of the lake about 4-30 p.m., glad to take shelter there from the persistent rain which was first met with on arriving at the lake side. Mr. M'Williams and family had made every arrangement for their comfort, large fires having been lighted in two rooms, with a plentiful supply of hot-water just on the boil. Tea was quickly prepared, of which the Members were greatly in need, everyone being most appreciative of the kindness and attention extended to them.

At the business meeting following tea six senior Members were elected. Reference was also made to the recent loss the Club had sustained in the deaths of Mr. Joseph Galloway, a Member for 30 years, and Mr. Burton Sefton, a Member for 18 years.

The route to Ballygowan was resumed about 5-30 p.m., the programme being somewhat altered on account of the heavy rain, and in due time the Members reached town again none the worse for the inclement weather.

THE KNOCKAGH.

Date—10th September, 1921. Conductor—T. Edens Osborne.

Number present, 48.

This, the eighth excursion of the Summer Session of the

Club, was attended by forty-eight members, who entrained for Greenisland at 2-15 p.m., a substantial reduction in railway fares most generously conceded by the management of the Midland Railway (N.C.C.) being much appreciated by all.

The approach to the Knockagh (the ancient name of which was "Knocksciagh," *i.e.*, "The Hill of the White Thorn,") was over a portion of the links of the Greenisland Golf Club, thence by easily negotiated paths to the base of the mountain. Here the party halted to give the Conductor an opportunity of outlining the programme.

Arrived at the hill Mr. R. Bell, H.M.Min.S., gave a short instructive address on the geology of the hill and district, in which he pointed out the irregularity of the basaltic strata, massive basalt being superimposed upon friable amygdaloidal basalt, which rests on another stratum of massive basalt, underneath which appears the chalk.

Although somewhat late in the season for a display of blooms, the botanists of the party found the flora of the hill most interesting. Among the specimens observed were the Wood Vetch *Vicia sylvatica*, L.; Spindle Tree *Euonymus europaeus*, L.; Bell Heather *Erica cinerea*, L., still beautiful in its profusion of pink bells; Golden Rod *Solidago Virgaurea*, L.; Common Agrimony *Agrimonia Eupatoria*, L.; Common Hemlock *Conium maculatum*; &c.

From the summit of the hill, 903 feet above sea level, a magnificent bird's-eye view was obtained of Belfast Lough, its shores and surrounding hills, the Mourne Mountains and coast of Scotland. After tea a brief business meeting was held, at which, in the absence of the President (Mr. S. A. Bennett, B.A., B.Sc.), the chair was occupied by Mr. F. Adens Heron, J.P., who suitably expressed the thanks of the Club to the Greenisland Golf Club for permitting the party to pass over a portion of their links *en route*. The election of seven new members, who were proposed

by the Hon. Treasurer and seconded by Mr. R. Bell, H.M.Min.S., terminated the proceedings, after which a start was made for Greenisland Station.

Although the weather conditions were by no means ideal, all the members were delighted with the outing. Evidently each one present had adopted the Rotarian motto: "Service, not Self," which created the same *esprit de corps* that has hitherto contributed so much to the success of the Club's summer excursions.

DROMORE.

Date—24th Sept., 1921. Conductor—Rev. Canon W. P. Carmody, M.A.
Number present. 47.

The ninth and concluding excursion of the Summer Session, was attended with magnificent weather.

The party journeyed to Dromore in reserved compartments by the 12-50 p.m. train. Some Members joined at Lisburn, others came by a later train, others, again, motored out. All, however, met in the Cathedral at Dromore, where they were welcomed by the Rector of Dromore (Rev. Canon J. W. Cooke) who gave a most interesting address on the history of the Cathedral from the time of St. Colman, early in the 6th century, down to the present day. St. Colman's "Pillow," an oval shaped block of stone bearing a beautifully incised cross in low relief, is now enshrined in the Cathedral wall between the vestry and the chancel, a greatly valued relic, with which the name of the late Canon H. W. Lett, M.A., M.R.I.A., is inseparably associated. The Dromore Bible, printed in 1613, another valued relic, was also shown, having recently come into the possession of the Cathedral authorities after an absence of 300 years. One cannot think of Dromore without associating it with the name of Bishop Jeremy Taylor (1613-67), whose name is perpetuated in the very handsome and valuable silver communion service, the gift to the Cathedral of Jeremy Taylor's wife. Another eminent divine of Dromore was Bishop Thomas Percy (1728-1811), the friend of Johnson, Goldsmith and

other distinguished contemporaries, and the author of "Reliques of Ancient English Poetry." His vestments, very carefully preserved, were shown to the Members, with many other relics of which the Cathedral is justly proud, including the recently erected War Memorial Window whose chaste design cannot fail to please all visitors.

The next halt was at the restored Cross erected on the abutment of the bridge over the Lagan. This memorial is mentioned as standing in the reign of James I., and still bears traces of very beautiful Celtic interlaced ornament. After many vicissitudes it was finally re-erected on its present site by the exertions of the Belfast Naturalists' Field Club.

The Club was also responsible for the re-erection in the Market Place of the old Town Stocks, the next object visited. The Stocks having been opened the Hon. Secretary allowed himself to be incarcerated therein, this being considered the appropriate moment for a photograph.

Passing the old Castle, said to have been built about 1607, the party proceeded to the great Mount of Dromore, where the Conductor gave a very interesting address on raths and earth mounds. This fine specimen of a rath is nearly 600 feet in circumference, 60 feet in height, with a diameter at the summit of 55 feet. It is surrounded by a rampart or battlement. The trench has two branches, embracing a rectangular fort of lower elevation, 100 feet in diameter. The Mount must have been in early times a place of great importance. The name of the townland on which it stands—Ballymaganlis (Baile-na-ceann-lios)—means "The Place of the Chief Rath." Twenty minor forts or mounts in two half-moon shaped lines, still exist and surround it.

The view from the Mount was superb: the placidly flowing Lagan in the immediate foreground at the foot of the rath, in the middle distance the swelling rise of Slieve Croob, flecked with light and shade, and backed by the blue-grey broken outlines of the

Mourne Mountains. These made a picture not easily to be surpassed, showing Co. Down at its very best.

From the Mount an adjournment was made to the Church School House, where, through the kindness of Canon Cooke, a plentiful supply of hot water was ready for tea-making, so that the members were soon sitting down to a much needed meal.

At the usual business meeting following tea, one Junior and nine Senior Members were elected. The President (Mr. S. A. Bennett, B.A., B.Sc.) having suitably voiced the appreciation of the Members for the kindness shown by Canon Cooke, and having outlined the programme of the forthcoming Winter Session, the proceedings terminated, the Members returning to Belfast by the 6 p.m. train.



Winter Session.

NOTE.—*The authors of the various Papers of which abstracts are given, are solely responsible for the views expressed therein.*

THE COMBER ESTUARY.

The first ordinary meeting of the Winter Session was held in the Museum, College Square N., on Tuesday, 25th October, when the President (Mr. S. A. Bennett, B.A., B.Sc.) gave his inaugural address, taking for his subject "The Comber Estuary," a district which has been often visited by the Club.

The President began by asking, in the first place, to be permitted to return his thanks to the Club for the honour conferred upon him in electing him to the Presidential Chair for the second year in succession.

He said—I appreciate the compliment all the more as my term of office has been rendered memorable in the annals of the Club by reason of the historic visit of their Majesties the King and Queen to Belfast, on June 22nd of this year, an event which afforded us the welcome opportunity of presenting a loyal and dutiful address to the Throne.

Furthermore, the Club seems to be entering on a period of increasing activity—a very pleasing sign of the times.

During the years of the war the work of the Club has been carried on with considerable difficulty, but now that those lean years have passed we may with confidence look forward to a brighter future. The financial difficulties, of which I spoke at some length in my last address, seem in a fair way to disappear under the magic wand of our Honorary Treasurer, to whose efforts the

notable increase of membership which has taken place during my term of office is mainly due. With this increase in our numbers, with better travelling facilities and with the livelier interest in Field Club work displayed by the community at large, our prospects are bright indeed.

Political changes, with which we as a Club have no concern, have made us the only Field Club in the country, and the time seems opportune for enlarging the scope of our activities. I would like to see the whole of Ulster regarded as the particular province of the Belfast Naturalists' Field Club. Looking back for a moment we can congratulate ourselves on a successful Summer Session. The Committee arranged eight excursions during the past summer months, and an average attendance of 48 Members showed how thoroughly their efforts were appreciated. There was always a considerable proportion of members who took a general rather than a special interest in Field Club matters; new Members were always coming in, though not always in such numbers as have recently been welcomed to our circle, and such Members may be to a large extent unaware of what the Club has achieved in the past, where its interests lie in the present, and what constitutes the ideal at which it aims for the future.

With a view to stimulating a more lively interest in such Field Club topics as outlined, the Committee have set aside an evening of the Winter Session for a discussion on the scope and aims of the Club, at which meeting I will submit my report as Delegate to the recent meeting of the British Association in Edinburgh.

Such an opportunity for an exchange of views on such a subject would open out new lines of activity for the Club, and thus help to make the Belfast Naturalists' Field Club even more successful in the future than it has been in the past.

The President then proceeded with his address, and stated that the area of the Comber Estuary is entirely covered by glacial

gravel deposited in late glacial times. This spreads out from Comber covering an area of about two square miles, mostly on the N. side of the estuary of the present river.

It represents the delta at the mouth of an overflow channel from the old glacial "Lake Belfast" of the Geological Survey Memoir—and is to be correlated in time with the Lisburn Eskesr, the Malone sands and clays, and the "dry gap" of Holywood. Haw Hill and Island Hill are to be regarded as the summits or "drumlins" of the earlier typical boulder clay of the district protruding through this later glacial deposit which is banked up against their sides.

Narrowing the investigation to the area lying between the levels of the highest and lowest tides he traced the effect of estuarine conditions on the vegetation of that limited area—which is occupied by typical Salt Marsh vegetation.

The Salt Marsh plants, owing to the conditions of life under which they exist, exhibit a desert *facies*—and adaptations to these conditions profoundly modify the Root and Leaf Systems of the plants.

The pioneer plant in the Comber Estuary is the Glasswort (*Salicornia*) of which two species were described. As the level of the land rises other plants make their appearance, notably the grasses *Sclerchloa maritima* Huds., and *Festuca rubra* L., which together form a compact sward in which many of our most beautiful seaside plants find a congenial home.

A short account was given of the formation of a salt marsh with its accompanying drainage channels and "Salt pans."

The *Festuca* meadow, in the Comber Estuary, is replaced at higher levels by closed associations of *Juncus maritimus*, Sm., or *Scirpus maritimus*, L. Where the water becomes fresher owing to drainage from the glacial gravels by which the estuary is surrounded the Reed grass *Arundo Phragmites*, L. makes its appearance.

The lecture closed with a comparison of the Comber Salt Marsh with other salt marshes in the N.-E. of Ireland.

The lecture was very well illustrated by a series of lantern slides, maps, and specimens of the plants discussed.

After a few remarks by the Hon. Secretary (Mr. A. M'I. Cleland), Mr. J. A. S. Stendall, M.B.O.U., and the Rev. W. R. Megaw, B.A., the proceedings terminated with the election of twelve new members.

THE ART OF BURIAL.

The second ordinary meeting of the Winter Session was held in the Museum, College Square N., on Tuesday, 15th November, when Mr. C. Bulla gave a lecture on the above subject, the chair being occupied by the President (Mr. S. A. Bennett, B.A., B.Sc.)

For the first four centuries of the Christian era (Mr. Bulla said), the Christians of Rome had interred their dead in the Catacombs, a series of subterranean excavations, consisting of long horizontal passages, with recesses on either side, arranged in tiers for the reception of the bodies, closed in by slabs bearing inscribed memorials and emblems of the faith. During the persecution of the second century the Catacombs were used as places of assembly for worship, and the association of the Church and the Cemetery thus established has continued ever since. It was in the ninth century that formal consecration of Churchyards became customary.

In Egypt and perhaps in Palestine the Christian church inherited the practice of embalming, to which there is frequent reference in the Scriptures. The Israelites learned the art from the Egyptians. The soil and climate of Egypt seem to have afforded facilities for embalming, unmatched in any other part of the world.

The notion that the dead may require the things they had needed in life has also preserved for the world of to-day many

relics of the customs of past ages, but to go into this would provide material for a life time's study in Egyptology alone.

Geology is our hand-maid in tracing the burial customs of ancient man, and the early race of the Neanderthals first attracts attention. From investigation in the valley lands of the Rhine, Seine, and other parts of France they were big men with low, receding brows, skulls somewhat pointed behind; evidently savages contemporary with the great extinct quadrupeds. In strong contrast to these we have the Cro-Magnon race, of good stature, of handsome and intellectual appearance who inhabited South-west France, the valley of the Meuse, and Italy. They existed long after the Neanderthals, for at least in the fourth of the progressive stages of their history, all the great mammals had disappeared, except the mammoth and rhinoceros, while the reindeer browsed peacefully in the still cold European wilds.

Belgium furnishes us with the remains of the third group of human beings—a small squat race, quite like the modern Lapps, known as the “Furfooz” race.

Of all these early races one broad statement may be made: they all practised burial of the dead, in many cases with conspicuous care and the accompaniment of respect and veneration, and no trace of cremation appears.

A great gap separates the period described from the Neolithic or Polished Stone age. Changes of surface may be noticed, the sea which covered the modern Netherlands left the country almost as we find it. The race of men occupying Europe had attained a higher level of culture, used finer implements, but still of stone, and practiced agriculture and other arts of life.

We may assume that the Neolithic was almost a “golden age” of progress—it saw the birth of the epoch of the great buildings which were erected, from India across North Africa, and up the western side of Europe. Dolmens, Cromlechs, Menhirs, Barrows or mounds, which we find in wonderful preservation in North America, Scandinavia, France, England, Holland, and

Ireland. These were all funeral monuments: vast graves, some still enclosing skeletons—the burial mound of Karby, in Gothland, contains eighty. The bodies buried in these structures are very often surrounded with a great variety and number of weapons, ornaments, trinkets, and amulets. All the interments point to universal inhumation, but we are gradually approaching the time when cremation was introduced—tentatively at first—for cremated and inhumated bodies have been found in the one grave.

A debt of gratitude is owing to the brothers Siret of Antwerp, whose explorations in the south of Spain were of great extent. It was a strange transition time from Neolithic to a metal period, which yielded them many hundreds of silver and other objects,

It would seem that with the introduction of bronze first comes evidence of cremation, though in fifteen villages, with 1,300 burial places, no cremations were found—the men of the sub-period had returned to the primæval custom of inhumation, the graves of very many being found beneath the floors of the dwellings. In four-fifths of the cases the bodies were found in a crouching, knee to chin, attitude, packed in large earthen jars, sometimes with a sealed cover; sometimes two jars placed mouth to mouth, and often two bodies, one of each sex, in the same jar. With the bodies were often found bones of oxen, copper axes, and quantities of trinkets of silver.

All evidence leads us to assume that cremation came in with the race of the great stone builders. Who were they? Whence came they? Travelling ever westward—their structures may be seen in the Crimea, Southern Russia, Spain, France, Germany, Holland, Denmark, Sweden, England and Ireland, and another life wave left other evidences in North Africa, Palestine, and even India. Drs. Bawens, Fergusson, Hamard and De Estienne consider this race to have been the Kelts, or at least Aryan or Indo-Germanic. Bawens states definitely: "The Aryans were the originators of cremation; all nations of Aryan origin made use of the funeral pyre. Non-Aryan races, with the exception of perhaps the Japanese, were strangers to the idea of cremation."

* * * * *

The grand national monuments of the Boyne Valley, five miles west of Drogheda, and thence extending about three miles along the north bank of the river, have been identified as the Brugh-na-Boinne of the monuments particularly described in the "Senchas na Relec," or History of the Cemeteries, preserved in the "Leabhar na-h-Uidri," and the "Dindsenchus" of the Book of Ballymote.

The lecture was well illustrated by a very fine series of lantern views, sketches and diagrams.

After a few remarks by the President, the Hon. Secretary (Mr. A. M'I. Cleland) and Rev. Canon W. P. Carmody, the proceedings closed with the election of thirteen new members.

THE CLUB'S ACTIVITIES.

The first Sectional meeting of the Club was held in the Museum, College Square North, on Tuesday, 29th November, when the President (Mr. S. A. Bennett, B.A., B.Sc.) read his report as Delegate to the British Association meetings in Edinburgh. Following this a series of very suggestive short papers or addresses was given on various activities of the Club, the writers or speakers indicating how best these activities could be carried on.

REPORT OF DELEGATE TO CORRESPONDING SOCIETIES' CONFERENCE OF BRITISH ASSOCIATION FOR THE YEAR 1921.

The meetings of the British Association took place this year at Edinburgh, and there were two meetings of the Conference of Delegates under the Presidency of Sir Richard Gregory—the distinguished Editor of *Nature*, the first meeting being held on Thursday, 8th September.

The subject of the Presidential address was "The Message of Science," in which Sir Richard Gregory emphasised the point that the main duty of Scientists was the creation of new knowledge for the world to use, the use to which the knowledge would be put would depend not on the Scientists as such, but on the moral sense of the community.

Speaking of the duties and functions of local Scientific Societies he appealed to the Conference of Delegates to do what they could through their own Society to disabuse the public mind of the idea that Science stands for nothing but gross materialism, an obligation to the community which I am glad to say the Belfast Naturalists' Field Club has always recognised. He pleaded for a closer relationship between the local Scientific Society and the community at large, and urged all local public authorities to take the opinion of their local Scientific Society as a matter of course, on all questions which fall naturally within the province of that Society.

I am afraid that in Belfast we are very far at present from this Utopian state!

At this meeting a resolution was passed urging the Council of the British Association to consider the question of reducing the cost of publishing Scientific Proceedings, either by grants in aid or in some other way.

The second meeting took place on Tuesday, 13th September, Sir Richard Gregory again in the chair, at which the subject of "Regional Surveys" was discussed, the speakers being Professor Patrick Geddes and Mrs. Frazer Davis.

The systematic study of a definite region from every point of view is work for which a Naturalists' Field Club is peculiarly fitted, and your representative fondly hoped that he would gather many new ideas on methods of work and presentation of results which would prove of interest to Club Members. Unfortunately this was not the case, the discussion revolving round the evolution of man and his works in relation to his environment, and regional

survey work was regarded merely as a means of improving the modern method—or lack of method—of town-planning. The exhibition of Regional Survey Maps was interesting and instructive, not as showing what to do and how to do it, but mainly as an example of what to avoid in making a Regional Survey of a district. Some of the efforts were in all senses of the word puerile, and some were not worth the making, simply because their contents could be read off the Ordnance Survey map of the district with the expenditure of very little time and thought.

There were, however, two exceptions to this in the maps of the South Wales coalfield area, compiled by the Ministry of Health with the direct object of supplying the government with information ; and a magnificent series of photographs of objects of local interest—each carrying a label which ensured complete identification—submitted by the North Staffs. Field Club, a society with which we exchange Proceedings. No maps were sent with this exhibit, but the series was of outstanding merit and suggests a line of future activity for our Club. At this meeting it was suggested that representatives should inform their respective societies that in future it is likely that each local society sending a delegate to the Conference will be called on to pay the usual membership fee to the British Association instead of exercising this privilege gratis, as at present. Your representative was asked to obtain an opinion on this point before next year's meeting at Hull.

(Signed) S. A. BENNETT, B.A., B.Sc.

PRESIDENT

Mr. N. H. Foster, M.R.I.A., F.L.S., M.B.O.U., wrote as follows on the subject of

ZOOLOGY.

Our President requests me to contribute a note towards this evening's proceedings, and my remarks will be confined to the domain of Zoology. To my mind Field Club workers should

devote their attention to the detailed distribution of our local fauna and its record. For this purpose it is necessary that the worker be more or less adept in the identification of the group or groups of animals, and it may be well to emphasise that a record based on faulty identification is absolutely useless, nay, even misleading and hurtful. In cases where the slightest doubt may exist it is essential to have the animal examined by an expert before recording its presence.

For Field Club purposes I am of opinion that marine Zoology may be ruled out, and that studies should be confined to those organisms which live on land or in fresh water. In our district the Vertebrate animals are fairly well known—particularly in the case of birds—but even here new discoveries await the worker. Within the past few years the Tree-sparrow, Scoter, and Fulmar have been added to the list of birds breeding in Ulster, and if I might prophesy I would hazard the opinion that the Widgeon and Little Tern will be found breeding in Co. Antrim. Again, the Black-necked Grebe is rapidly spreading its breeding range in the British Islands, and its nesting has been discovered in several Irish localities within the past few years. So far as I know none have been found in Ulster, which contains many lakes adapted to this bird's requirements, and which are utilised by its relatives the Great-crested and Little Grebes.

As regards the study of Invertebrate animals there is a vast field for exploration. In our district the distribution of the Land and Freshwater Molluscs, Terrestrial and Freshwater Crustaceans (Amphipods and Isopods) and Myriapods have received considerable attention, and although, doubtless, some further details may be forthcoming, in the main these groups may be considered as fairly worked out. Some of our members have from time to time dabbled among the Lepidoptera (Butterflies and Moths), Coleoptera (Beetles), Spiders and False Scorpions, but in these groups for the most part there is plenty of room for good systematic workers. Outside the afore-mentioned there is practically virgin

ground for work. Numerous Orders of the Class Insecta have been totally neglected, and whilst it must be admitted that great difficulty exists regarding the necessary literature requisite for the study of some of them, in the case of the Ants this is not so. This group I would recommend to some energetic worker. It is not overwhelmingly difficult, and in Donisthorpe's book, "British Ants," should be found enough information to enable one to do good and useful work.

For about thirty years the *Irish Naturalist*, a monthly journal, has provided Nature History workers with masses of information. Owing to paucity of support it is feared that its issue must be suspended if many new subscribers be not forthcoming. I think I am correct in stating that not more than about half-a-dozen of our members (and of these about half are resident outside Ulster) give it their support. Notwithstanding the recent influx of new members this index of the Club's vitality seems to point to a very low ebb, and I would appeal to members for support in this matter.

It is highly improbable that any one of us is destined to rear a great biological edifice, but each one can gather sufficient clay to make a brick which, who can tell, the future Darwin may find an indispensable unit for the construction of his temple.

(Signed) NEVIN H. FOSTER,

M.R.I.A. F.L.S., M.B.O.U.

Mr. R. Bell, H.M.Min.S., gave the following short address on

GEOLOGY.

Probably no district of such limited extent in the three kingdoms exhibits so many formations worthy of the attention of the Geological student as the hills in the vicinity of Belfast. It may be said, with almost equal truth, that no district receives less attention at the present day. This in spite of the fact that almost

all the beds which the ranges of hills exhibit on their slopes yield fossils and minerals, and that excellent sections are available to everybody.

It must not be supposed, from the comparative neglect of an interesting district, that previous observers have so exhausted the subject that there remain no attractions to the original worker. In spite of the careful observations of the past, unrecorded minerals and new fossil sections are not difficult to discover, and those who know the district best still look upon it as a promising field for further work.

The Secondary rocks of this district have been the subject of many elaborate reports. Major-General J. E. Portlock, of the Royal Engineers, when conducting the Geological branch of the Ordnance Survey of Ireland, gave a summary of all that was then known and added the result of his own observations in his "Report on the Geology of the Co. of Londonderry, &c.," published in 1843.

Since then occasional papers have been published by others interested in the science, the most valuable being those of that distinguished scientist, the late Professor Ralph Tate, F.G.S., the founder of the Belfast Naturalists' Field Club.

Professor Tate contributed to the *Quarterly Journal of the Geological Society*, in 1864, an elaborate paper "On the correlation of the Cretaceous formations of N.E. of Ireland," with list of fossils found therein, figuring some of the new species. Then he investigated the Liassic rocks of Antrim and Derry, his work on this subject, communicated to the Belfast Naturalists' Field Club, and published in the Proceedings for 1870, still remaining the best record of these rocks.

Further contributions to our knowledge of our secondary rocks have been made by the distinguished French geologist, Mons. C. Barrois, who, in 1876, published a monograph on the Upper Cretaceous Rocks of Antrim and Derry. The same rocks were also investigated in the year 1877, by a member of the Belfast Naturalists' Field Club, the late Mr. William Gault, who

was well known as an ardent field geologist. Reference may also be made to the systematic lists published by the Belfast Naturalists' Field Club of the records of the early researches of Messrs. J. Wright, F.G.S., S. A. Stewart, A.L.S., F.B.S.E., and Wm. Swanston, F.G.S.

More recently an exhaustive study of the Cretaceous strata of Co. Antrim has been made by Dr. F. W. Hume, who, in 1897, published a paper on the subject in the *Quarterly Journal of the Geological Society*. The researches made by Dr. Hume mark the beginning of a new epoch in the science of Cretaceous rocks.

The new map and the new memoir of the Geological Survey, published in 1904 by the Government Surveyors, under the direction of Mr. G. W. Lamplugh, F.G.S., are of immense value to the field geologists. The memoir is trustworthy in its information and is rendered doubly serviceable in its new form by its reference to the work done by the Belfast Naturalists' Field Club, whose Geological Section, started in the year 1895, has made many investigations in the N.-E. corner.

Fully twenty years have elapsed since a circular was sent to the Belfast Naturalists' Field Club by Professor Kendall, Secretary to the British Association Erratic Block Committee, requesting the Club to co-operate by examining the Glacial deposits of this district. A ready response was at once made by the Club, and a collection of Irish rocks commenced, in order to assist in the identification of the parent localities from which the erratics might have travelled, specimens of Scottish rocks likely to be met with being presented by Professor Kendall. A room was acquired at the Museum where meetings could be held and the collection of erratics and implements stored. The patient accumulation of a multitude of details on many points was willingly undertaken by many members of the Club, as well as by the little group specially appointed. Erratics from outlying districts were received from time to time, invaluable assistance being also given by the late Mr. S. A. Stewart, A.L.S., F.B.S.E., and Mr. Joseph Wright,

F.G.S., whose works on the Molluscs and Foraminifera of our Boulder Clays rank amongst the classics of British Glacial literature. Madame Christen contributed a summary of recent Glacial investigations by the Geological Section, which was published in the Club's Proceedings for 1905-6. Mention must also be made of the late Miss M. K. Andrews, whose patient and long persevering zeal is well known to the Members of the Club, as is also the work she accomplished in Glacial Geology.

As a result of the above efforts many Field Club excursions took place, and meetings were held where papers were read and specimens examined. We have now over 200 different erratics in our Club collection, a good many of which are undoubtedly Scottish in their origin.

I would like to bring before new Members some of the finds I have made since the Geological Section started.

In the year 1902 I discovered in Sluggan Bog a jelly like mass which puzzled me. It was sent to Mr. Richard Moss, of Dublin, who determined it to be "Dopplerite." This mineral was new to the British Isles, and was named "Dopplerite" after Herr Doppler who first discovered it in Germany. It was honoured by being described in a paper by Mr. Moss which he read before the Royal Dublin Society in 1903.

In the year 1908 my attention was drawn by Mr. W. H. Wickes of Bristol to the occurrence of the mineral named "Beekite" on certain fossils which the latter had discovered in the south of England. On examining my own collection of local fossils I was agreeably surprised to find on several of my specimens a development of this mineral, especially on *Exogyra columba* (Lam.), which is an oyster found in the Chloritic Sands of the Upper Cretaceous.

In 1909 I discovered at Cat-Cairn, Ligoniel, another mineral new to Ireland, a rhyolite named "Gyrolite." It formed the subject of a paper by Mr. F. N. Ashcroft, which he read at the Mineralogical Society and published in the *Mineralogical Magazine*.

I also discovered in the Basalt of Killyleagh a mineral named "Phacolite." This mineral was also brought before the Mineralogical Society and is new to Ireland.

In July of this year (1921) I discovered in the Lignite deposits of Lough Neagh a trunk of lignite partly silicified. This is the first time it has been seen since 1751, when it was found by G. D. Barton, and described in his famous lecture on the "Petrifactions, Gems, and Crystals of Lough Neagh."

This discovery proves that the silicified wood that we find round Lough Neagh's banks comes from the Lignite beds.

Mr. W. A. Green read the following interesting address on the claims of

PHOTOGRAPHY AS AN AID TO NATURE STUDY.

There are many members in the Club, who, like myself, have never devoted themselves to research work on strictly scientific lines, either from want of sufficient time or from want of knowledge, but who, from the love of Nature and her works, are keenly interested in all branches of Natural History study and whose privilege it is from time to time to add valuable items of information to those who not only study themselves, but record and tabulate for the use of future students such information as they acquire themselves or that may be brought to their notice.

Therefore I hold that, in a Club such as ours, every individual has a place, and that we can all contribute our quota to the general knowledge.

Now that the war is over, and that we are once more at liberty to use our cameras, it struck me that here was a way in which many of us could obtain valuable records for future reference. I am quite well aware that our good friend Mr. Welch has set us a standard which none of us are likely to attain, both in the unapproachable excellence of his work and the untiring pertinacity with which he sought out and recorded everything

which he considered might benefit the Club's work, now or in the future, and I most sincerely regret that he has so completely withdrawn himself from scientific work. We miss his kindly face among us in our meetings and excursions, and I for one would welcome the time when he would once more associate himself with us.

But to come to a concrete suggestion. I am quite aware that there are a number of albums belonging to the Club in which photographs of the places of interest visited on excursions were placed. These were sometimes on view at the conversaziones and contain most excellent views, taken and contributed by Members of the Club.

Now I should like to see this revived, but in a slightly different way. I would suggest:—one album for Botany, one for Geology, one for Zoology, and one for Archæology.

It is a pity to clear out the rare plants in a district, but photographs, with full particulars and name of donor, would form a lasting record, and besides, the very act of photographing them gives one a most intimate knowledge of the conditions under which the plant lives and its surroundings, a knowledge not always obtained by merely pulling and pressing them. Then again—in Zoology say—there is a wide field for photography, in the habitats of various creatures, and also a knowledge to be gained incidentally of their economic values. For example, my boy and I went to the Ballinderry river in Co. Derry a couple of months ago, where, as we understood, the pearl mussel could be obtained. We spent two days about the river, and were initiated into the mysteries of mussel fishing by the people of the district. We photographed men on the river fishing for them and saw the flat bottomed boats used by the pearl hunters.

Some years ago I happened to be in the Toome district, doing some general photography, and saw some people steeping flax. I was sufficiently interested to take a photograph, and the friend who was with me told me that the scutching stock was still

in use in that locality. To make a long story short, I stayed a fortnight with him, and he drove me round the district. I got pictures of several of the old methods used in the country in the manipulation of flax—hand scutching, breaking, cloving, hand heckling, etc. Curiously enough most of the people engaged in these primitive operations are since dead, and as they appeared to be the last to use them I think they are now obsolete. In the same district I also got photos of an Old Irish Corn Custom, "Cutting the Calliagh," which, as you know, is mentioned in the late Miss Andrews' book.

I may be pardoned for referring so much to myself, but I wish to point out that even if our work falls short of the high standard of merit which we should like to attain, still the records in themselves are of value, perhaps to future generations, to illustrate old customs of our country that have passed for ever away.

If my suggestion commends itself to the Club, I would propose that an Honorary Keeper of Prints should be appointed to whom should be sent any photographs—no matter what size—of scientific interest to the Club, with full particulars, including date. These should be posted in the album set apart for the particular subject, and such album should be produced from time to time at the Club's meetings and Conversaziones.

Mr. J. Skillen urged the claims of

ARCHAEOLOGY,

referring at some length to the work done in this department by Mr. W. J. Knowles, M.R.I.A., of Ballymena; and by the late Dr. Buick. He also mentioned several localities in which good work still remained to be done, as, for instance, in the Kitchen Middens of Whitepark Bay and among the sand dunes of Portstewart.

The Rev. W. R. Megaw spoke on

BOTANY,

and appealed for more workers among the Mosses and Hepatics,

recommending H. N. Dixon's "Handbook of British Mosses," 2nd edition, as a reliable guide to the student. He pointed out that workers in this department could find great assistance by supporting the various Moss Exchange Clubs now in existence.

The Hon. Secretary (A. M'I. Cleland) supported W. A. Green in his remarks on Photography, and showed a number of interesting prints of buildings, etc., now no longer in being, and urged, in particular, that a systematic record should be made of local Geological features of the district.

AT HOME WITH FUR AND FEATHER.

The third ordinary meeting of the Winter Session was held in the Museum, College Sq. N., on Tuesday, 20th December, when Mr. E. A. Armstrong, B.A., delivered a lecture on above subject. The chair was occupied by the Vice-President (Rev. W. R. Megaw, B.A.), who, before introducing the lecturer, referred to the recent losses the Club had sustained through the deaths of Mr. Joseph Malcomson and Mr. E. F. Green, votes of condolence being passed to the relatives of both families.

The lecturer explained at the outset that he had entitled his lecture "At Home with Fur and Feather" because, in the first place, he was going to speak of and show pictures of the birds "at home," at their nests or with their young; and secondly, he had tried to become specially intimate with birds and mammals, to become "at home" with them by living amongst them. He showed how by sleeping in a small tent, or merely between ground sheets in the birds' haunts he was able to study and photograph the different species, and he recommended this plan to all who wished to get a real insight into the wonders of nature. He pointed out that his photographs were taken with a small hand camera, showing that bird photography need not be confined to affluent experts; he mentioned that he had found it possible to give long exposures on birds on their nests in shady places owing

to the fact that when a sitting bird hears the click of the shutter she remains still in an alert attitude for a considerable period

The remainder of his lecture dealt with mammals and birds to be found:—(1) About the home or garden. (2) On the shores of Lough Neagh. (3) At Strangford Lough. (4) In Epping Forest.

Under (1) he showed photographs of a Robin on its nest in a rather unusual situation—among Honeysuckle and Jasmine on a wall some 14ft. from the ground. The birds had been frightened by rats from their original nest in a bucket on the ground. Some would like to attribute the selection of the safer position to “reason,” but he believed that it was due to an instinct “to seek safety higher.” Photographs of a Willow Warbler which had lost its tail and of a Wren which, falling into a lake was able to swim ashore, were shown. Other pictures showed Greenfinch on nest, Spotted Flycatchers, Blue Tits, Hedge Sparrow on nest, Blackbird, Thrush, Jackdaw, Rooks nest-building, etc. A photograph of a Raven was shown, and the lecturer mentioned that a pair frequented the hills near Belfast. The Chough also he had observed in the district.

Under (2) he dealt with land and water birds to be found at Lough Neagh. Pictures were shown of Wild and Tufted Ducks and their nests. The last-named has happily increased in numbers in the district during recent years. The Snipe was found nesting, and a picture was shown of a well grown young bird which, nevertheless, was diligently tended by its mother. This young bird deliberately swam a ditch. He spoke of the destructiveness of Magpies, and showed a photograph of two well grown Wood Pigeons which were shortly afterwards devoured by these greedy marauders. One of his pictures showed a Dabchick covering its eggs with weed on leaving them. When frightened from their nests these birds would remain away for some time, and eventually creep closer, reconnoitring with head and neck only exposed. Then one would at length waddle on to the nest

while the other kept in the vicinity. The bird would pile more weed over the eggs and leave them but would very shortly return and sit. The local name of this bird is "Dam Pudden," an appropriate name bespeaking accurate observation of the Dabchick when out of the water. A family of Coots was shown—difficult birds to photograph. The Pheasant, Waterhen, Heron, etc., were other birds shown and described. Ram's Island and its avifauna were also dealt with. The Badger and Irish Hare were depicted and described.

Under (3) he spoke of and showed many of the birds which breed on the Islands of Strangford Lough. A Kestrel in flight was shown depicting how the bird when gliding opens both primaries and secondaries of the wings. Nests of Tern, Ring Plover, Oystercatcher, Herring Gull, (showing young emerging from egg), and Red-breasted Merganser were shown. Various studies of the Merganser, a very beautiful bird, were screened. The lecturer had photographed it plucking the down from its breast. Young Rock Pipits and Redshank were also shown.

Dealing with the fauna of Epping Forest the lecturer described his photographs of Follow Deer and Fox. He mentioned that so close to London, the Fauna was, none the less, rich and varied, largely due to the protection afforded by the enforcement of recent legislation.

At intervals records of the songs of Blackbird and Thrush were heard (thanks to the kindness of Mr. T. Edens Osborne). The lecturer also imitated the notes of Woodpigeon, Woodpecker, Brown Owl, Raven, Curlew, Ringed Plover, etc.

The excellent series of lantern views exhibited were all made and coloured by the lecturer.

At the conclusion of the lecture an interesting discussion ensued, in which the Vice-President and Messrs. J. A. S. Stendall, M.B.O.U., J. Loughridge, H. Coey, and J. Holness took part, the proceedings terminated with the election of one Associate and five Ordinary Members.

SPIDERLAND.

The fourth ordinary meeting of the Winter Session was held in the Museum, College Square N., on Tuesday, 17th January, when a lecture was given, entitled "Spiderland," by Mr. J. A. S. Stendall, M.B.O.U., the chair being occupied by the President (Mr. S. A. Bennett, B.A., B.Sc.). Before calling upon the lecturer, the names of Mr. Robert J. Welch, M.R.I.A., and Professor J. K. Charlesworth, D.Sc., Ph.D., M.R.I.A., were put before the meeting for election as Honorary Members, this being passed unanimously.

The lecturer in his early remarks outlined the characteristics of the spider group, following this with details of their life history, explaining that unlike insects spiders undergo no metamorphosis, but leave the egg as tiny spiders which undergo a series of moults, usually nine in number, before becoming adult. The young are soon able to look after themselves, and their activities among several different species were described. In the case of the snare-builders, the tiny spiders, after hatching out within a silken egg sac, live in harmony for a little while, but after the first moult, which takes place within the sac, they become voracious and will attack and eat each other with impunity. The egg sac of the hunting wolf spider is carried about by the mother, attached to her body by a silken thread, and the young on hatching are carried about on the parents' back until strong enough to fend for themselves.

The lecturer went on to explain the curious migration habit existing among the young of all spiders, irrespective of species. This migration is accomplished on a calm sunny day, when the young ascend to some high point, anchor themselves, turn their bodies skywards, at the same time emitting from their spinnerettes streams of silk. These float upwards and eventually exert a pull and lift the little animals into the air, after they have snapped the anchor lines. In this manner they travel to pastures new. These fine threads floating through the air are generally termed "gossamer."

Poison facts and myths were discussed, the lecturer stating that any spider living in the British Isles could be handled with impunity, but some foreign species were doubtfully dangerous though probably not to a healthy person. Specimens of what is regarded as a really deadly species *Latrodectus scelio* Thor., of Australia and New Zealand were exhibited. This animal is known among the natives as "Katipo" and by them is greatly feared.

Methods of snare construction were afterwards explained; also the wiles adopted by different species for the capture of their prey.

In some species spider courtship, it was stated, is not altogether a pleasant occupation, at least not for the male, as he is liable to be eaten by the female if deemed unsuitable, or if she happened to be "moody." Among all spiders the female is the larger, except in the case of the water spider *Argyroneta aquatica*, Latr., the extraordinary habits of which the lecture explained in detail.

The description of the activities of the trap-door spider created much interest as also did the fact that we have in these islands a species *Atypus affinis*, Eich., which, while not actually constructing a trap door, lives its life in a tubular retreat dug in the ground. Instead of making a trap this spider continues the silken lining of the burrow into an aerial tube, from within which it captures its prey, dragging this through the silken wall which is afterwards repaired.

The lecturer in his concluding remarks dealt briefly with spider instinct and intelligence.

A large series of coloured lantern slides were used to illustrate the lecture, these greatly adding to its interest. At the conclusion a remarkable Kinema film showing spiders performing various operations, including the building of snares and the capture of prey, was shown and highly appreciated.

At the conclusion of the lecture a short discussion followed in which the President, Messrs. Hoskins and Holness, and the

Hon. Secretary took part, the proceedings terminating with the election of four new Ordinary Members.

RADIO-ACTIVITY IN RELATION TO GEOLOGY.

The fifth ordinary meeting of the Winter Session was held in the Museum, College Square N., on Tuesday, 21st February, when Mr. J. C. A. Brierley, M.Sc., gave an interesting lecture on the above subject, the chair being occupied by Mr. J. A. S. Stendall, M.B.O.U., in the absence of the President (Mr. S. A. Bennett, B.A., B.Sc.) through indisposition.

Starting with the discovery of helium in the sun's atmosphere, by Sir Norman Lockyer, the lecturer gave the history of the observations of the photographic and electric effects of certain minerals: the separation of helium by Hildebrand, and its subsequent identification as helium by Lockyer and Ramsay. The discovery and identification of argon by Rayleigh and Ramsay, and the separation of the crude argon into argon, krypton, xenon, and neon, were described, and the identification of radium "emanation" as niton was demonstrated: these six new elements filling their respective vacant spaces shown in the periodic law of Newlands and Mendeleeff, thus proving that no further member of this group remains unknown.

The lecturer then dealt with M. and Mme. Curie's well-known work on pitchblende and other uranium minerals and the discovery of radium, afterwards describing the earlier work of Becquerel and Crookes on the "Becquerel rays," demonstrating their analysis into alpha, beta and gamma rays, and following up with the discovery of polonium and ionium, and the identification of the latter as an "isotopic" form of lead.

The work of Rutherford and Soddy on thorium and the separation of radio-active thorium A were described, and then the electric charge, mass and velocity of the α particles, and the fact that the α particles were positively charged helium atoms demonstrated. The filtration and counting of the α particles,

and the filtration, imponderability and velocity of the *b* rays were demonstrated, and the rate of growth and also decay of radio-activity described and explained.

The effect of current and magnetic electricity upon the *a* and *b* rays and the deductions drawn therefrom lead to a discussion of the modern conception of the construction of the atom, and finally in considering the varying radio-activity and the products thereof found in different geological strata, minimum estimates of the ages of the various strata of the crust of the earth were given, these minima being stated as from 850 million years to about twice that number.

The lecture, which was listened to with great attention, was fully illustrated by a fine series of lantern diagrams and at its close a hearty vote of thanks was tendered to the lecturer.

CONVERSAZIONE.

The fifty-ninth Annual Conversazione and Exhibition was held on Tuesday, 28th March, when a company of 160 members and friends met in the Carlton Hall at Six p.m. Owing to the late date at which the meeting was held, and the effects of Summer Time, the first portion of the three hours during which the Conversazione lasted had the advantage of good daylight, enabling the exhibits to be seen very well indeed.

The following exhibits were shown :—

ZOOLOGY.—Skulls of mammals, by Mr. J. Orr; Irish land and freshwater mollusca, by Mr. R. J. Welch, M.R.I.A.; a very fine set of exquisitely mounted objects showing the “Life Histories of Insects,” by the late Mr. E. F. Green (a junior member of the Club), exhibited by special request; twenty-one species and varieties of cowry shell *Cypræa* and fan mussels *Pinna nobilis* by Mr. A. M'L. Cleland; slough of grass snake, by the President (Mr. S. A. Bennett, B.A., B.Sc.); lac produced on palas ree *Butea frondosa*, by an insect of the order Hemiptera, *Tachardia lucida*, forming shellac of commerce, from India; also aberration

of dark-green fritillary *Argynnis aglaia* L., from Portballantrae, Co. Antrim, described in "Irish Naturalist," vol. XXX., p. 15; also cases of Indian butterflies, by Mr. W. M. Crawford B.A., I.C.S., F.E.S.; cases of trap-door spiders and bird-eating spiders; also oblong giant snail *Bulinus oblongus* with eggs and young, by Belfast Municipal Museum; nests and eggs of common tern, ring plover, and oyster-catcher in their natural habitats, arranged and very finely tabled, by Mr. J. A. S. Stendall, M.B.O.U.; wing and tail feathers of immature female hen harrier *Circus cyaneus* L., by Dr. C. J. Milligan, shot on Divis Mountain, 13th August, 1921.

BOTANY.—Mounted grass seeds; mounted fruits of *carices*; local fumitories and rarer *carices*, with distribution maps, by the President (Mr. S. A. Bennett, B.A., B.Sc.); mounted specimens and photographs of local plants of Co. Down and Co. Antrim, by Mr. N. Carrothers; common sedges, by Mr. J. R. H. Greeves; specimens of the genus *Hypnum*, by Mr. Wm. Porter; curious form of dandelion root, by Mr. J. Glover; exhibit illustrating the action of carbon dioxide upon the development and growth of root and shoot, by Prof. J. Small D.Sc., M.R.I.A.; microscopical slides illustrating botanical subjects, by Miss W. Sayers, B.A.; selection of English plants not found in Ireland, by Capt. C. D. Chase, M.A.

GEOLOGY.—Collection of minerals and fossils made sixty years ago, by Patrick Doran; also Carboniferous corals, plain and polished, by Mr. C. Bulla; calcite and Fontainebleau sandstone, by Mr. D. J. Carpenter; sections of Lower Ludlow bone-bed, from Stokesay, Shropshire; also white basalt, from Kinghorn, Fife, and Carboniferous Limestone, containing vegetable matter, out of bed of volcanic material, from Kinghorn, Fife, by Mr. A. M'H. Cleland; levine, from Wolfhill and chabazite, from Magheramorne; also smoky quartz and topaz, from Mourne Mountains, by the President (Mr. S. A. Bennett, B.A., B.Sc.); photographs, showing glacial action in the Swiss Alps, by Mr. T. E. Osborne, F.R.S.A.I.; minerals from Counties Antrim and London-

derry, including stilbite, natrolite, etc., by Mr. R. Bell, H.M.Min.S.; plant remains from the interbasaltic beds at Glenavy, by Mr. W. A. Green, F.R.S.A.I.

ARCHÆOLOGY.—Flint axe-head from Marlborough Park: also Indian copper celt, B.C. 1080, by Mr. W. M. Crawford, B.A., I.C.S., F.E.S.; flint flakes, from Larne raised beach, by Mr. R. H. Common; prehistoric stone cleaver found in the Kitchen middens at Tranarossan, Co. Donegal, in 1921, by Mr. W. A. Green, F.R.S.A.I.; stone implements and old Irish lamps, by Rev. Canon Carmody, M.A.; prehistoric implements from Black Mountain and Holywood, also illustrations of flint implements excavated at Abydos, by Mr. T. E. Osborne, F.R.S.A.I.; typical collection of local flint implements, by Mr. W. Duncan.

Among the historic exhibits may be mentioned the following—A fine collection of old books, tabled by Mr. A. A. Campbell, F.R.S.A.I., including the "Northern Whig," vol. I., 1824; "Strabane Morning Post," from 1812; "The Microscope," a Belfast magazine of 1800; "Claimants' names adjudged Premiums for Growing Flax," 1796; "Captain Rock in London," 1825; "Poems of the Rev. John Graham," 1829. Miss Mawdsley showed a fine sampler in its original frame and glazing, dated 1776; also collection of Maunday money and ancient Welsh alms dish. Mr. C. Bulla showed three bound volumes of "John Bull" for 1820-22.

The miscellaneous exhibits included:—Optical lantern for projecting reflected objects, by Belfast Art Society, per Miss M. Armstrong; portable electric photo lantern, by Messrs. Lizars; a large collection of local photos by various members of the Club; a beautiful set of hand-painted photos of Irish scenery, by Mr. W. A. Green, F.R.S.A.I.; playing cards, from Orissa, India, by Mr. W. M. Crawford, B.A., I.C.S., F.E.S.

The Junior Section of the Club was very well represented, the exhibition including:—Miss Hoskins (photos, bird's eggs, nest of thrush, fossils and flint implements); Messrs. W. W. Walsh

{birds' eggs); R. Crawford (leaves of trees); M. P. Crawford (local plants); W. J. M'Knight (bird's eggs); J. H. Rea (photos and flint implements); Miss Gracie M'Conkey (fossils from Lough Neagh district); Miss Jean Mulligan (local plants).

Tea was served in the Restaurant punctually at 8-15 p.m., after which the President (Mr. S. A. Bennett, B.A., B.Sc.) gave a short address, in which he reviewed the work of the past Session. With the election of five new members a most enjoyable evening was brought to a close.

BIRDS: EXTINCT AND LIVING.

The Sixth, and concluding, ordinary meeting of the Winter Session was held in the Museum, College Square, N., on Tuesday, 21st March, when Mr. Nevin H. Foster, M.R.I.A., F.L.S., M.B.O.U., gave a most interesting lecture on the above subject. The chair was occupied by the President (Mr. S. A. Bennett, B.A., B.Sc.), who, before introducing the lecturer, referred to the fact that two Members (Mr. A. Deane and Professor J. Small) had recently been elected Members of the Royal Irish Academy; also the Hon. Treasurer (Mr. T. E. Osborne) had been elected a Member of the Royal Society of Antiquaries of Ireland, and the Hon. Librarian (Mr. W. M. Crawford) a Fellow of the Entomological Society.

Mr. Foster said that in the system of zoological classification birds constitute a *Class*, and that the easiest of diagnosis, for all birds were clothed in a garment of feathers, and further, a feather was a structure only found on birds.

It was believed that in the long past ages birds had evolved from reptiles, for the skeletons of both bear a close affinity; but birds had progressed much further as, owing to their possessing a four-chambered heart, they were able to keep their bodies at an uniform temperature despite the varying heat of their surroundings. Birds and mammals agreed in this respect, and together were classed as warm-blooded animals. The covering of reptiles con-

sisted of scales, and it is probable that the feather has been developed from a frayed scale. Though of this no actual proof could be advanced, it was worthy of note that the feet and legs of birds are still covered with scales similar to those borne by reptiles.

Prior to the geological period known as the jurassic no remains of any animal higher than a reptile had been discovered, but in the Bavarian rocks of that era was found, in 1861, a fossil of an undoubted bird. This fossil is now in the British Museum, and another fossil of the same species * found a few years afterwards is deposited in the Berlin Museum. From these two fossils it was possible to make the picture, shown on the screen, of the oldest known bird, the *Archæopteryx*. This bird, which was about the size of a rook, was clothed in feathers precisely the same as are found on all birds, but it showed remarkable differences to all living birds in the possession of true teeth in the jaws and the structure of the tail. Other extinct birds alluded to included the *Hesperornis*, *Ichthyornis*, *Moa*, *Dodo* and the *Garefowl*, or *Great Auk*, etc., bones of the last named of which had been found in Co. Antrim.

Mr. Foster then proceeded to speak about some living birds, choosing for representation a few species found respectively in Europe, Asia, Africa, and Australasia. Of the European birds mentioned some, like the Crane and Spoonbill, had formerly nested in England; others were casual visitors to our shores; but the Lammergeyer or Bearded Vulture had never been known to visit us. Among Asian species the peculiar nesting habits of the Hornbill and Tailor-Bird were described. Africa was represented amongst others by the largest living bird, the Ostrich. Humming Birds were only to be found in America and the adjoining islands, and in brilliancy of plumage some of them were unsurpassed by the birds of any clime. Some dozen species from

* Recent research has shown that the Berlin specimen is not only specifically but even generically different from the London specimen. The latter, which is a more primitive form, retains its name while *Archæornis* is proposed for the Berlin fossil.

Australia, Papau and New Zealand were chosen to represent the Australasian avifauna. Among these the gorgeous colouring and peculiar feather structure of some of the Birds of Paradise were spoken of. The lecturer concluded by a reminiscence of a visit to Lord Rothschild's Museum, Tring, where a case of Birds of Paradise bears witness to the skill in taxidermy of our fellow townsman, Mr. Sheals.

The lecture was illustrated by a series of very fine slides, and at its conclusion a short discussion followed in which Messrs. J. A. S. Stendall, M.B.O.U., J. Holness, and S. M. Macoun took part. The meeting concluded with the election of Mr. John Vinycomb, M.R.I.A., as Honorary Member, and Messrs. G. W. C. Porter and W. J. Knight as Ordinary Members.

ANNUAL MEETING.

The Annual Meeting was held in the Museum, College Sq. N., on Tuesday, 25th April, at 8 p.m., Mr. J. A. S. Stendall, M.B.O.U., in the chair during the earlier part of the proceedings, there being a good attendance of members.

The Annual Report, Hon. Treasurer's Statement, Hon. Librarian's Report and the Report of the Hon. Sec. of the Junior Section having been read, it was proposed by Mr. F. Adens Heron, J.P., seconded by Mr. F. W. Walker, and resolved, that these Reports be adopted, printed and circulated as usual.

It was proposed by Mr. J. A. S. Stendall, M.B.O.U., seconded by Mr. A. Albert Campbell, F.R.S.A.I., and unanimously resolved that Rev. W. R. Megaw, B.A., be elected President for the ensuing year.

On taking the chair the President referred to the good work Mr. S. A. Bennett, B.A., B.Sc., President for the past two years, had done for the Club, and on the motion of Mr. R. J. Welch, M.R.I.A., seconded by Mr. A. Percy Hoskins, F.I.C., F.C.S., it was resolved that the best thanks of the members be tendered to Mr. Bennett for his services.

The election of the remaining office-bearers for 1922-23 was then proceeded with, the following selections being made :—Vice-President, Mr. J. A. S. Stendall, M.B.O.U. ; Hon. Treasurer, Mr. T. Edens Osborne, F.R.S.A.I. ; Hon. Librarian, Mr. W. M. Crawford, B.A., I.C.S., F.E.S. ; Hon. Secretary, Mr. A. M^l. Cleland ; Hon. Sec. for Geology, Mr. R. Bell, H.M.Min.S. ; Hon. Sec. for Botany, Mr. S. A. Bennett, B.A., B.Sc. ; Hon. Sec. for Zoology, Mr. W. A. Green, F.R.S.A.I. ; Hon. Sec. for Archæology, Mr. A. Albert Campbell, F.R.S.A.I. ; Hon. Sec. for Junior Section, Mr. J. R. H. Greeves ; Ordinary Members of Committee : Miss S. Blackwood, Prof. J. K. Charlesworth, D.Sc., M.R.I.A. ; Mr. F. Adens Heron, J.P. ; Mr. A. Percy Hoskins, F.L.C., F.C.S. ; and Mr. Wm. Porter.

Notice of motion having been handed in by Mr. J. A. S. Stendall, M.B.O.U., he moved that Rule IV. be amended as follows :—"That not more than two Honorary Members be elected in any one year." The motion was seconded by Mr. S. M. Macoun and carried.

There was on view during the evening a fine collection of mounted photographs on loan from the North Staffordshire Field Club. The Hon. Secretary showed portion of a Cephalopod *Orthoceras bisiphonatum* recently taken from boulder clay during excavations at the Gas Works. Mr. R. J. Welch, M.R.I.A., exhibited an album containing almost one hundred book-plates designed by Mr. John Vinycomb, M.R.I.A., an Hon. Member and Past President of the Club. These included a number of book-plates of well-known Irish naturalists and antiquarians. Mr. Welch also showed a photo chess-board, the dark squares of which were nature-printed Irish ferns, the light squares circular family portraits ; also a large oval decorated wall panel of gold and silver ferns, with Irish grasses and mosses, mounted on claret coloured velveteen, the pile of the fabric holding the ferns, etc., in position without any paste or gum, thus avoiding fungus growth.

With the election of two new Ordinary Members a very successful meeting was brought to a close.

RULES

OF THE

Belfast Naturalists' Field Club.

As amended at General Meeting held 25th April, 1922.

I.

That the Society be called "THE BELFAST NATURALISTS' FIELD CLUB."

II.

That the object of this Society be the practical study of Natural Science and Archaeology in Ireland.

III.

That the Club shall consist of Ordinary, Junior, Life, Corresponding and Honorary Members. The Ordinary Members shall be proposed and seconded at any ordinary meeting of the Club, and such members may be elected at the next ordinary meeting following, by a majority of votes, provided that in the meantime the first Annual Subscription has been paid. They shall pay annually a subscription of Five Shillings. Members who are twelve months in arrear in their subscriptions shall not receive any further circulars or other printed matter.

That the composition fee for Life Membership be Four Guineas.

Junior Members, who must be between the ages of 12 and 21, shall be elected in the same way as Ordinary Members, but shall pay annually a subscription of One Shilling (1/-) from 12 years of age to 18, and a subscription of Two Shillings and Sixpence (2/6) from 18 years of age to 21. Junior Members shall not receive any printed matter except the usual notices; shall not have the power to vote; and shall not borrow books from the Club's Library without special permission from the Librarian. On attaining their majority they shall become Ordinary Members, and shall pay an annual subscription of Five Shillings (5/-).

IV.

That the Honorary and Corresponding Members shall consist of persons of eminence in Natural Science, or who shall have done some special service to the Club; that such Members may be nominated by any Member of the Club, and on being approved by the Committee, may be elected at any subsequent Meeting of the Club by a majority of the votes of the Members present. That not more than two Honorary Members be elected in any one year. That Corresponding Members be expected to communicate a paper once within every two years.

V.

That the Officers of the Club be annually elected and consist of a President Vice-President, Treasurer, Librarian, and one or two Secretaries, together with the Secretaries of the various Sections of the Club. That the office of President or that of Vice-President shall not be held by the same person for more than two years in succession.

VI.

That the General Committee shall consist of the above-named officers with nine ordinary members of Committee, and shall hold at least eight meetings during the year; five persons to form a quorum.

That three ordinary members of Committee shall retire annually in order of seniority, those retiring being ineligible for re-election for one year. Should any ordinary member of Committee fail to attend at least three of the Committee meetings held during the year his or her place may be considered vacant and another member elected to fill the position. No ordinary member of Committee shall hold the post of Secretary in any of the Sections. That in the event of a vacancy occurring in the General Committee a new member may be co-opted to fill such vacancy for the remainder of the year.

That nominations for ordinary members of Committee shall be sent in writing to the Secretaries on or before the 21st day of March in each year. That the privilege of nominating members of Committee shall be held by all Ordinary and Life Members of the Club. That the names of those members so nominated shall be published on the circular convening the Annual Meeting, at which the Ordinary Members of Committee shall be elected by ballot. That should the necessity arise the retiring members of Committee shall be balloted for.

VII.

The Committee may from year to year appoint Sectional Secretaries and Committees, as may be considered desirable, to further original investigations in any one or more departments of the Club's work. No financial responsibility to be incurred by any Sectional Secretary, Sectional Committee, or any Officer of the Club without the previous approval of the Club's Committee. The Junior Section to have a Committee composed of Six Members of the Club, the Chairman to be annually appointed by the General Committee.

VIII.

That the members of the Club shall hold at least Six Field Meetings during the year, in the most interesting localities, for investigating the Natural History and Archaeology of Ireland. That the place of meeting be fixed by the Committee, and that five days' notice of each Excursion be communicated to Members by the Secretaries. That each of the Sectional Secretaries shall be made responsible for the running of one Regular Excursion, the programme to provide study in the subject appertaining to the Section, and that any additional Special Excursions shall be arranged by the Secretaries of the Sections concerned.

IX.

That regular Monthly Meetings be held during the Winter Session from November till April, inclusive, for the purpose of reading Papers: such Papers as far as possible to be original, and to treat of the Natural History and Archaeology of the district. That the Papers to be read be secured by a Standing Organising Committee, consisting of the Hon. Secs. of the Club, together with the Sectional Secretaries and a Chairman. That between the Regular Monthly Meetings of the Club Special Meetings open to all Members of the Club may be held, at which Papers of specialised interest would be discussed. That the Sectional Secretaries shall each be responsible for the providing of a programme for one Regular and one Special Meeting, one Regular and one Special Meeting to be arranged by the Hon. Secs. Any extra Meetings shall be arranged by the Organising Committee, if desired. That the programme for the Winter Session shall be completed by the date of its First Meeting and issued to all Members. That each notification announcing a Regular Meeting or Excursion shall also serve to notify Members of the next Special Meeting or Excursion.

X.

That the Committee shall, if they find it advisable, offer for competition Prizes for the best collections of scientific objects of the district; and the Committee may order the purchase of maps, or other scientific apparatus, and may carry on geological and archaeological searches or excavations, if deemed advisable, provided that the entire amount expended under this rule does not exceed the sum of £10 in any one year.

That the General Committee may offer from time to time such prize or prizes as they may deem desirable for competition among Schools in or near Belfast.

XI.

That the Annual Meeting be held during the month of April, when the Report of the Committee for the past year, and the Treasurer's Financial Statement shall be presented, the Committee and Officers elected, Bye-laws made and altered, and any proposed alterations in the general laws, of which a fortnight's notice shall have been given, in writing, to the Secretary or Secretaries, considered and decided upon. The Secretaries to give the Members due notice of each intended alteration.

XII.

Members of other Irish Field Clubs, residing temporarily or permanently in or near Belfast, may be enrolled as Members of the Club without election or entrance fee on production of a voucher of membership of another Club, and without subscription for the current year, on production of a receipt showing that such subscription has been paid to another Club. Failing the production of such receipt, the usual subscription for the current year to be paid to the Treasurer on enrolment. The names of Members so admitted to the Club to be published with the notice of meeting following the date of their enrolment

XIII.

That, on the written requisition of twenty-five Members, delivered to the Secretaries, an Extraordinary General Meeting may be called, to consider and decide upon the subject mentioned in such written requisition.

XIV.

That the Committee may be empowered to exchange publications and reports, and to extend the privilege of attending the Meetings and Excursions of the Belfast Naturalists' Field Club to Members of kindred societies, on similar privileges being accorded to its Members by such other societies.

RULES FOR THE CONDUCTING OF EXCURSIONS.

I. The excursion to be open to all Members, each one to have the privilege of introducing two friends. The time for commencing as many as possible of the Half-Day Summer Excursions to be not prior to 2 p.m.

II. A Chairman to be elected as at ordinary meetings.

III. One of the Secretaries to act as Conductor, or, in the absence of both, a Member to be elected for that purpose.

IV. No change to be made in the programme, or extra expense incurred, except by the consent of the majority of the Members present.

V. No fees, gratuities, or other expenses to be paid except through the Conductor.

VI. Every Member or Visitor to have the accommodation assigned by the Conductor. Where accommodation is limited, consideration will be given to priority of application.

VII. Accommodation cannot be promised unless tickets are obtained before the time mentioned in the special circular.

VIII. Those who attend an excursion without previous notice will be liable to extra charge, if extra cost is incurred thereby.

IX. No intoxicating liquors to be provided at the expense of the Club.

Exchanges of Proceedings, 1921=22.

Belfast—Natural History and Philosophical Society.

Report and Proceedings for 1918-19.

„ Presbyterian Historical Society of Ireland.

Irish Presbyterian Magazine (1919).

300 years of Presbyterianism in Ireland (1613-1913).

The Presbyterian Historical Society : Its Story and Aim.

Annual Reports for 1919, 1920, 1921.

Birmingham—Natural History and Philosophical Society.

Proceedings, Vol. XIV., Part 4. List of Members (1919), and

Annual Report (1920).

Bournemouth—Natural Science Society.

Vol. XI. (1918-19) and XII. (1919-20).

Brighton and Hove—Natural History and Philosophical Society

Report for 2 years ending 1920.

Bristol—Naturalists' Society.

Proceedings, 4th Series, Vol. V., Parts 2 and 3.

Laws revised to 1920.

Cardiff—Naturalists' Society.

Transactions, Vols. L. (1917) and LI. (1918).

Chester—Society of Natural Science, Literature and Art.

Annual Reports Nos. 49 (1919-20) and 50 (Jubilee, 1920-21).

Dublin—Royal Irish Academy.

Proceedings, Vol. XXXV. Sec. B., Nos. 3 to 11.

Sec. C., Nos. 6 to 12.

Dublin—Royal Society of Antiquaries of Ireland.

Journal, Vol. XLIX, Part 2 : Vol. L., 1 and 2 : Vol. LI., 1 and 2

Dumfriesshire and Galloway—Nat. Hist. and Antiquarian Society.

Transactions, Series III., Vol. VII.

Eastbourne—Natural History, Photographic and Literary Society

Transactions and Journal, Vol. VIII., Nos. 26 and 32.

Edinburgh—Geological Society.

Vol. XI., Part 1 (1920).

Essex—Field Club.

Essex Naturalist, Vol. XVIII., Nos. 6 to 12; Vol. XIX. Nos.
3, 4, and 5; Vol. XX. No. 1.

Glasgow—Royal Philosophical Society.

Vol. L. (1918-20).

Halifax, Nova Scotia—Institute of Science.

Proceedings and Transactions, Vol. XIV., Part 4; Vol. XV.
Part 1.

Leyden—Rijks Ethnographisch Museum.

Reports for 1918-19 and 1920.

Liverpool—Geological Society.

Vol. XIII., Parts 1 (1919-20) and 2 (1920-21).

London—British Association.

Report of Conference of Delegates, 1921.

„ British Museum.

Economic Series, Nos. 9, 10, and 11.

„ Geologists' Association.

Proceedings, Vol. XXXI., Parts 2, 3, 4; Vol. XXXII., Parts 1,
2, 3, 4; Vol. XXXIII., Parts 1 and 2; Index to Vols.
XXI. to XXX.

„ Linnean Society.

Proceedings for 1919-20 and 1920-21.

List of Members for 1920-21 and 1921-22.

Manchester—Microscopical Society.

Annual Reports for 1919 and 1920.

Marlborough College—Natural History Society.

Reports, Nos. 68 (1919), 69 (1920), and 70 (1921).

Norwich—Prehistoric Society of East Anglia.

Proceedings, Vol. III., Parts 2 (1919-20) and 3 (1920-21).

Oxford—Ashmolean Natural History Society.

Report for 1920.

Perthshire—Society of Natural Science.

Transactions and Proceedings, Vol. VII., Parts 2 (1919-20)
and 3 (1920-21).

Toronto—Royal Canadian Institute.

Transactions, Vol. XII., Part 2; Vol. XIII., Parts 1 and 2.

Torquay—Natural History Society.

Vol. II., Nos. 5 and 6; Vol. III., No. 1 (1921).

U.S.A.—Boston—Society of Natural History.

Proceedings, Vol. XXXV., Nos. 4, 5, and 6.

,, California—Academy of Sciences.

Proceedings, Vol. II., Part 2, Nos. 13 to 17; Vol. VIII., Nos. 2,
8, and 9 and Index; Vol. IX., Nos. 1 to 15 and Index;
Vol. X., Nos. 1 to 9.

,, Chicago—Field Museum of Natural History.

Annual Report, Vol. V., Nos. 3, 4, 5, and 6.

Publication No. 207 (Zoological Series), Vol. XIV., No. 1.

,, Cincinnati—Lloyd's Library.

Mycological Notes, Nos. 48 to 60.

Vol. V. Index - Miscellaneous (7 papers).

,, Milwaukee, City of—Public Museum.

Bulletin, Vol. II., No. 2; Annual Report for 1919.

,, Wisconsin—Natural History Society.

Vol. XIII., No. 4 (Dec., 1915).

,, Missouri—Botanical Garden.

Bulletin, Vol. VIII., Nos. 7, 8, and 10; Vol. IX., Nos. 1 to 5,
7, 8, 9; Vol. X., Nos. 1, 2, and 3.

,, Philadelphia—Academy of Natural Sciences.

Proceedings, Vol. LXXI, Parts 2 and 3; Vol. LXXII., Parts 1,
2 and 3; Vol. LXXIII., Part 1.

,, Portland—Society of Natural History.

Vol. III. Part 2 (1919).

U.S.A.—Washington—Geological Survey.

Bulletins, 679, 682, 697, 704, 706, 712-714, 715 (A, K-M), 716 (D-H),
719, 725 (A-I), 726 (B, C, D, F).

Water Supply Papers: 447, 449, 451, 453, 456, 459-462, 464-466,
471, 472, 474-476, 481, 490 (A, B), 500 (A, B).

Professional Papers: 121, 123, 128 (D, E), 129 (A, B).

Mineral Resources: 1915, Part I., No. 9.

„ „ 1916, Part II., Nos. 9, 11, 27, 28.

„ „ 1917, Part I., No. 9 and Index.

„ „ 1918, Part I., Introduction and Nos. 28, 31;
Part II., Parts 34-37 and Index.

„ „ 1919, Part I., 6, 9-12, 15-27; Part II., 4, 5, 8,
10, 13-34.

„ „ 1920, Part I., Preliminary Survey and Nos.
1-17; Part II., 1-23, 25.

Publications (from Smithsonian Report), Nos.
2558, 2561 to 2569, 2599 to 2607.

Washington—Government Printing Works.

Museum Reports for 1918-19, 1919-20 and 1920-21.



List of Members.

Any change in the Address of Members should be at once notified
to the Secretaries by Post Card.

The Dates prefixed to Members' names signify date of Election.

O stands for an Original Member who signed the requisition for the
formation of the Club in 1863.

Hon. Members.

1914. Charlesworth, Professor John K., M.Sc., Ph.D., F.G.S., Queen's
University, Belfast.
O Donaldson, George, 1 Prospect Street.
O Phillips, Wm. H., Lemonfield, Holywood.
1866. Swanston, W., F.G.S., Farm Hill, Dumanurry
1902. Schorff, Robert F., B.Sc., Ph.D., F.L.S., M.R.I.A., F.R.S.A.I.,
Knockramny, Bray, Co. Wicklow
1922. Vinycomb, John, M.R.I.A., F.R.S.A.I., 59 Thrinton Av., Streatham,
London, S.W.
1880. Welch, R. J., M.R.I.A., 40 Lonsdale Street
1867. Wright, Joseph, F.G.S., 10 May Street

Corresponding Member

- O* Holden, J. S., M.D., Sudbury, Suffolk.

Life Members

1903. Stelfox, A. W., A.R.I.B.A., M.R.I.A., 14 Clareville Road, Rathgar,
Dublin.
1893. Wilson, Alec G., J.P., M.R.I.A., Croglin, Ballyvaughlis

Ordinary Members.

1921. Adams, John, Anburn, Cranmore Park
1907. Adams, Rev. W. A., B.A., The Manse, Antrim.
1915. Aird, Hugh, 10 King Street
1917. Alderdice, R. Sinclair, F.C.I.B., 12a Linenhall Street.
1921. Alexander, Miss M., Summer Hill, Stranmillis
1911. Anderson, Mrs. D'Arcy, Ballyhossett House, Downpatrick
1911. Anderson, Miss Sarah M., 1 Church View, Holywood.
1882. Andrew, J. J., L.D.S., R.C.S. (Eng.) 23 University Square
1892. Andrews, Miss E., 10 Park Crescent, Tonbridge, Kent
1912. Andrews, Miss E. L., Inla, Comber.
1911. Andrews, Miss M. A., 50, Eglantine Avenue.
1912. Andrews, Dr. Marion B., D.P.H., Orsett, Derryvolgie Avenue
1913. Andrews, Michael C., F.R.G.S., F.R.S.G.S., do.
1921. Ardis, R., A.M.I.E.E., 6 Marine Parade, Holywood
1916. Armstrong, Miss Dorothy, Corlea, Somerton Road.
1915. Armstrong, Edward A., B.A., do.
1921. Ashtorth, Rev. A. O., Marsden, Cyprus Park, Bloomfield
1921. Aswhworth, Mrs., do.

1916. Baillie, Robert, Elleslie, Ravenhill Park.
 1907. Bailhe, W. T., 26 Green Road, Knock.
 1915. Beattie, John Carson, Deaf and Dumb Institution, Lisburn Rd.
 1921. Beaumont, Ivor, A.R.C.A., M.S.A., F.R.S.A., F.I.B.D., Municipal College of Technology.
 1905. Beck, Miss, 1, Derryvolgie Avenue.
 1913. Bell, D. M., Carragh Ard Lodge, Newcastle, Co. Down.
 1896. Bell, B. George, Solitude, Lurgan.
 1893. Bell, Robert, 64, Newington Avenue.
 1917. Bell, Miss Janet M., Daisybank, Holywood.
 1921. Bell, Miss Emma, Cressington, Rosetta Park.
 1908. Bennett, S. A., B.A., B.Sc., Campbell College, Belmont.
 1884. Bigger, F. J. M.R.I.A., F.R.S.A.I., Ardriagh, Antrim Road.
 1914. Bird, Miss, 18 Connaught Mansions, Prince of Wales Road, Battersea Park, London, S. 11.
 1916. Black, S. C., 15, College Gardens.
 1921. Black, Miss N. M., Northdene, North Road, Bloomfield.
 1898. Blackwood, Miss Sarah, 6 College Green.
 1921. Blair, Mrs. J., 14, Cliftonville Avenue.
 1921. Bloom, H. M., The Hermitage, Marino, nr. Holywood.
 1921. Bowman, Miss A., 1, Rossmore Avenue.
 1893. Boyd, Miss E. S., 5 Brook Terrace, The Grange, Guernsey.
 1894. Royd, W. C., J.P., Thornhill, Farnham Road, Bangor.
 1917. Bradley, Mrs., Haypark House, Knock.
 1916. Bradley, Miss L. L., Haypark House, Knock.
 1921. Brand, W. J., 18 Ashley Gardens.
 1883. Brandon, Hugh B., J.P., 2, Wellington Place.
 1863. Brett, Sir Charles H., Grettton Villa South, Belfast.
 1921. Brierley, J. C. A., M.Sc., 224 Cliftonville Road.
 1921. Brown, Archibald, Scottish Amicable Life Assurance Society, 13 Donegall Square West.
 1883. Brown, Thomas, J.P., 102, Donegall Street.
 1876. Bulla, Charles, 272, Lisburn Road.
 1921. Burden, S. H., 8 Alfred Street.
 1899. Burrowes, W. B., F.R.S.A.I., Ballynaveigh House, Belfast.
 1911. Brown, J. B. M., 356 Ormeau Road.
 1920. Broughton, E., 58 Hopefield Avenue.

 1921. Camac, Dr. J., Parldysburn Fever Hospital.
 1903. Campbell, D. C., J.P., M.B.O.U., Templemore Park, Londonderry.
 1909. Campbell, John, Albert Brickworks, Carrickfergus.
 1917. Campbell, James, Jennymount Mill, Belfast.
 1921. Campbell, A. Albert, F.R.S.A.I., Drumaferrie, Rosetta Park.
 1921. Campbell, Mrs. A. Albert, Drumaferrie, Rosetta Park.
 1921. Campbell, Mrs., 20 Wellington Park Avenue.
 1914. Carter, Charles S., 25 Donegall Street.
 1891. Capper, J. Malcolm, 14, Linenhall Street.
 1904. Carmody, Rev. Canon W. P., M.A., Lisburn.
 1892. Carrothers, Nathaniel, 145, Stranmillis Road.
 1892. Carson, J. C., 8, Wellington Place.
 1907. Chambers, W., 35, Cranmore Avenue.
 1920. Chandler, W. P., 35 Rugby Road.
 1920. Chandler, Mrs., 35 Rugby Road.
 1919. Chase, Capt. C. D., M.A., Campbell College, Belmont.
 1921. Chase, Miss Kathleen, 8 Chilworth Buildings, Stranmillis Road.
 1921. Chase, Miss Ethel, 8 Chilworth Buildings, Stranmillis Road.
 1921. Cheyne, S. Donald, J.P., 11 Donegall Place.
 1901. Cheyne, H. H., Roseneath, Bangor.
 1920. Churchill, Miss, Inverary, Strandtown.

1894. Cleland, Alex. M.L., 28 Green Road, Knock.
 1894. Cleland, Mrs. Annie, 28 Green Road, Knock.
 1890. Cleland, James A., Brooklyn, Holywood
 1917. Close, R. M., M.R.I.A., 13 Donegall Square North.
 1921. Coey, Henry, Midland Railway Co. (N.C.C.), Terminus, York Road
 1921. Cousins, D., 4 Frederick Terrace, Malone Road
 1914. Corrigan, Chas., 1 Dnedin Terrace, Antrim Road
 1906. Cowie, James, Midland Railway Co. (N.C.C.), Belfast
 1921. Crawford, W. M., B.A., I.C.S., F.E.S., Orissa, Malborough Park
 1921. Crawford, Lieut.-Col. F. H., C.B.E., Clorreen, University Road
 1921. Crymble, Mrs. S., 18 College Green
 1913. Cunningham, Miss M. E., F.R.S.A.I., Glencairn, Belfast.
 1884. Cunningham, Rt. Hon. Samuel, Fernhill, Belfast
 1915. Cunningham, Josias, R.N.V.R., M.B.O.U., Fernhill, Belfast.
 1921. Curry, Wm., 5 Oakland Avenue, Bloomfield
 1921. Cuthbert, Rev. A., M.A., Rocklands Manse, Carrickfergus

 1921. Davison, A. H., F.A.I., Estate Agent, 32 Wellington Place
 1916. Davis, Miss E. C., Lauraville, Balmoral.
 1921. Deane, Arthur, M.R.I.A., Art Gallery and Museum, Belfast
 1919. Deans, T. M., B.A., LL.D., Academy House, Rosetta.
 1891. D'Evelyn, A. M., M.D., Ballymena.
 1915. Dick, Miss Mary E., M.A., 8 Wellington Park
 1921. Dickson, S. E., 9 Donegall Square West
 1921. Dinsmore, J. A. S., 28 and 30 Castle Place
 1921. Dobbin, W. C., Eastnor, Somerton Road
 1921. Dobbin, Mrs. W. C., Eastnor, Somerton Road
 1921. Daggart, Henry, 24 Canterbury Street
 1921. Donaldson, Dixon, Dunoon, Islandmagee, Co. Antrim.
 1908. Duncan, W., 54 Textile Buildings, Donegall Square South
 1921. Dunwoody, W. J., 10 Marine Parade, Holywood
 1909. Dwyerhouse, Major A. R., D.Sc., F.G.S., M.R.I.A., University
 College, Reading

 1921. Earls, Professor J., B.A., 31 Ravenhill Park
 1921. Earls, Miss Annie, do.
 1916. Edwards, Herbert, 54 Ulsterville Avenue
 1916. Edwards, Mrs., 54 Ulsterville Avenue
 1881. Elliott, David, B.A., J.P., Ardree, Bloomfield

 1868. Faren, W., F.R.S.A.I., 11 Mountcharles
 1921. Farrell, George, 1 Mount View, Lower Windsor Avenue
 1912. Ferguson, Mrs., St. Helen's, Holland Park, Knock
 1913. Ferguson, Samuel, St. Helen's, Holland Park, Knock
 1918. Fyldes, H., 29 Wilmont Terrace, Lisburn Road
 1921. Finlay, W. J., Haslar, Galwally, Belfast
 1897. Finlay, Miss, A. M., 3 Old Nichol Street, Bethnal Green, London, E.S.
 1906. Finlay, Arch. H., Willesden, Holywood
 1921. Fleet, Capt., H. G., Municipal College of Technology
 1899. Foster, Nevin H., F.L.S., M.R.I.A., M.B.O.U., Hillsborough
 1903. Foster, Mrs. N. H., Hillsborough
 1911. Foster, Miss A. B., B.Sc., Y.W.C.A., William Street, Waterford
 1921. Freeland, Samuel, 23 Meadowbank Street
 1892. Fulton, David, Arlington, Windsor Avenue
 1921. Fulton, Wm., 44 Wellington Place

 1904. Gaffikin, William, J.P., Notting Hill
 1891. Galloway, Joseph, 50 Eglantine Avenue
 1892. Gamble, Miss, Lorne, Craigavad

1913. Gardner, Miss Nettie H., B.Sc., Hawthornden Road, Knock
 1893. Gibson, Andrew, F.R.S.A.I., Fairsfield, Lansdowne Road
 1917. Gibson, Mrs., Bonnington, Lansdowne Road
 1911. Gibson, Mrs. Joseph, Hollow Bridge House, Hillsborough, Co. Down
 1921. Gibson, Wm. J., Montpelier House, Malone Road
 1921. Gibson, R. H., M.R.I.A., 5 West Elmwood
 1921. Gibson, Samuel, J.P., Summer Hill, Dunmaurry
 1921. Gilliland, J. H., 33 Gresham Street
 1921. Gilliland, W. T., B.Sc., 7 Wellington Place
 1921. Glendinning, R. G., Jun., Cloughmore, Myrtlefield Park
 1905. Glover, James, The Glebe, Kirkenabbin, Co. Down
 1918. Gordon, Eustace, 35 Rosemary Street
 1921. Gore, W., Municipal College of Technology
 1921. Graham, Thomas, 26 Alexandra Avenue
 1891. Green, Mrs. Isaac, Hawthornden, Knock
 1895. Green, W. A., F.R.S.A.I., 4 Salisbury Terrace, Chichester Park.
 1921. Green, H. P., Linchurst, Holland Park, Knock
 1920. Greenham, Miss J. C., 44 Orient Gardens
 1901. Greeves, J. Theodore, Nendrum, Knockdene Park.
 1901. Greeves, W. Leopold, Ormeau Avenue
 1901. Greeves, Fergus M., Garranard, Sydenham
 1918. Greeves, O. V., Tavanagh House, Portadown

 1908. Hadden, Mrs., Magharree, Portadown
 1920. Hale, W. Bancroft, 6 Salisbury Gardens
 1921. Hall, Henry, 177 Saugville Street
 1883. Hamilton, Rt. Hon. and Rev. T., D.D., LL.D., Queen's University
 1908. Hamilton, Miss, 5 Church Avenue, Holywood
 1921. Hamilton, Wm., 32 Silvio Street
 1920. Harbison, Wm., Highbury, North Road.
 1916. Harper, V. M. B.A., Campbell College, Belmont
 1920. Haslett, W., Model School, Belfast
 1921. Haslett, F. W., 1 Ulster Terrace, Lisburn Road
 1921. Hayward, H. Richard, Hopefield House, Antrim Road
 1921. Heenan, Miss J., 11a Stranmillis Road
 1908. Henry, F. W., Ye Olde Castle, Castle Place
 1915. Herdman, Miss E. W., Fountaineville, University Road
 1876. Heron, F. Adens, D.L., J.P., F.R.S.A.I., Maryfield, Holywood
 1921. Hawton, J., M.P.S.I., 315 Ormeau Road
 1921. Higginson, Thomas Sherlock, 20 Waring Street
 1921. Higginson, R. Ernest, 20 Waring Street
 1905. Hobson, Mrs., Aitennach, Crawfordsburn, Co. Down
 1921. Hoffman, F., Leamington, 7 Old Cavehill Road
 1895. Hogg, A. R., 10 Thorndale Avenue
 1908. Hogg, D. J., 16 Kansas Avenue
 1903. Holland, Miss, Highbury, Cadogan Park
 1904. Holland, Frank, Fairyhill, Osborne Gardens
 1921. Holness, John J., 26 Ava Street
 1906. Hopkirk, F. G., Midland Railway Co. (N.C.C.) Belfast
 1919. Horsbrugh, C. B., Blessington House, Hillsborough, Co. Down
 1921. Hoskins, Miss M., 14 Rosetta Park
 1921. Hoskins, A. P., F.I.C., F.C.S., 14 Rosetta Park
 1911. Houston, Miss, Lisheen, Sans Souci Park
 1914. Houston, James Dick, Northern Bank, Elphin, Roscommon
 1921. Houston, H. S., Shievmarra, Jordanstown, Co. Antrim

1921. Ireland, J. Herbert, 107 South Parade

1892. Jaffe, Lady Kinedar., Strandtown
 1909. Jenkins, W. A., 6 Elmwood Terrace
 914. Jenkinson, Henry, 29 Rosemary Street
 11901. Johnson, Rev. W. F., M.A., F.F.S., M.R.I.A., 4 Killowen Terrace, Rostrevor
 1906. Johnston, F. W., The Cottage, Cultra
 1916. Johnston, Miss M. B., Beechville, Glenburn Park
 1921. Johnston, E. C., F.R.S.A.I., Glenmount, Newtownards
 1911. Jones, W. Bradwen, 3 Salisbury Villas, Chichester Park
 1921. Jones, H. H., Solicitor, 21 Mayfair, Arthur Square
1916. Kay, Miss M. P., B.Sc., Burnside, Bangor
 1917. Keiller, W., 11 Chichester Street
 1918. Kennedy, David, Pembroke, Wandsworth Road, Knock
 1921. Kennedy, Captain E. R., A.R.L.B.A., The Bungolow, Sandown Road, Knock
 1921. Kennedy, R. N., J.P., Avonmore Lodge, Balmoral
 1920. Kenny, Mrs. E. E., 41 Claremount Street
 1921. Kernohan, J. W., M.A., Seaforde, Park Road
 1921. Kidd, James, 44 Brookvale Avenue
 1899. Killen, William, 3a Dudley Chambers, 20 Waring Street
 1886. Kirkpatrick, F., 27 Oxford Street
 1868. Knowles, W. J., M.R.I.A., F.R.S.A.I., Flixton Place South, Ballymena
 1877. Kyle, R. A., 17 Wellington Park
1921. Lane, F. W., 79 Portallo Street
 1901. Larmor, H. G., J.P., Lisburn.
 1920. Lavery, W. H., Glenwood, Bloomfield Road
 1921. Lawther, Miss J., 11 Park Grove, Hull
 1912. Ledgerwood, N. J., J.P., 10, Wellington Park.
 1921. Lees, Miss S. L., Drumadoon, Castle Park
 1920. Lepper, R. S., M.A., L.L.M., F.R.S.A.I., Eslinore, Crawfordsburn
 1899. Lindsay, Professor J. A., M.D., M.A., F.R.C.P., 3 Queen's Elms
 1918. Lindsay, Eric, c/o. Ulster Bank, Cromac Street
 1915. Lindsay, Mrs., c/o. Ulster Bank, Cromac Street
 1921. Lindsay, A. G., Northern Bank House, Hollywood
 1921. Londen, J. B., 28 Salisbury Avenue, Antrim Road
 1921. Loughridge, James, 173 Cliftonville Road
 1918. Lowry, Miss, Hazelwood, Bloomfield
 1918. Lewis, Mrs. A. J., 2 Ranfurly Drive, Bloomfield
 1893. Lowry, D. E., c/o. P. K. Arm. Ltd., Clarence Street West
 1908. Lowry, James, Llewellyn Avenue, Lisburn.
 1919. Lowry, Miss L., Hazelwood, Bloomfield.
 1917. Lyttle, James, 1, Olney Terrace, Ballygomartin Road.
1921. Mackenzie, W. G., A.R.H.A., The Studio, Clarence Place
 1921. Macloy, Miss A. E., Guil-na-Mban, Norfolk Drive, Glen Road
 1915. Macomachie, Rev. D. H., B.A., B.D., The Manse, Hollywood.
 1915. Macomachie, Mrs., The Manse, Hollywood
 1905. Macom, Mrs. S. M., Clanrolla, Windsor Park
 1912. Macom, S. M., Clanrolla, Windsor Park
 1920. Magowan, A., 2, Easton Crescent.
 1921. Magowan, Mrs., 2 Easton Crescent
 1876. Major, Rev. J. J., Doagh, Co. Antrim
 1905. Malcolm, Miss Susan, Downshire Road, Hollywood.
 1921. Malcolm, Bowman, M.I.C.E., M.I.M.E., Inver, Ashley Park
 1899. Malcolmson, J. G. B., Cairnbourn, Strandtown.
 1901. Malcomson, Herbert T., M.B.O.U., 32, Arthur Street.
 1901. Malcomson, Joseph, 32, Arthur Street.
 1914. Manning, J. W., Slieve Donard Hotel, Newcastle.

1921. Manning, W., 16 Shaftesbury Square
 1880. Marsh, Mrs., Glenlyon, Holywood.
 1891. Marshall, H. C., Bryansburn Road, Bangor.
 1916. Masterson, Miss, 93 Wellesley Avenue.
 1915. Mawdsley, Miss, 28 Green Road, Knock
 1908. Maxwell, Henry, Dunalbine, Deramore Park.
 1892. Maxton, Jas., M.I.N.A., 6 Kirkliston Drive, Bloomfield.
 1919. Mayes, A. S., 23, Glandore Avenue.
 1903. Mayne, H. Horner, 24, Elmwood Avenue.
 1921. Meakin, Chas., 119 The Mount
 1917. Megaw, Rev. W. R., B.A., The Manse, Rosetta
 1920. Megaw, I. J., 26 Linenhall Street
 1921. Mercier, Alderman S. T., J.P., 89 Cliftonville Road
 1918. Metcalfe, A. W., Hawthornden Road, Knock.
 1906. Millar, Thomas O., 306, Antrim Road.
 1907. Millar, Miss Bessie, 22 Ravenhill Gardens
 1921. Milligan, Dr. C. J., Dispensary House, Ligoniet
 1911. Montgomery, Thos. Ward, 40 Rosemary Street
 1898. Montgomery, H. C., F.R.S.A.I., 40 Rosemary Street
 1913. Montgomery, Miss E. S., 26, College Green.
 1920. Montgomery, Miss S., 120, Eglantine Avenue.
 1920. Montgomery, Miss G., 120, Eglantine Avenue.
 1911. Montgomery, Miss Jane E., 8, Sandhurst Road.
 1916. Moore, Frank, J.P., F.E.I.S., Home-Lyu, Marlborough Park North
 1917. Morrison, Rev. Robert, B.A., The Curateage, Hillsborough.
 1921. Morrison, Miss I., Southleigh, Knockbreda Park
 1921. Mulowney, J., A.M.I.E.E., Rathverde, Cherryvalley Park

 1915. MacCarthy, Mrs., Freshford, Knock.
 1905. MacCleary, A., Kensington Hotel, College Square East.
 1901. MacRae, Kenneth, Ulster Agricultural Society, Balmoral
 1899. M'Bretney, W. A. J., 31, Haypark Avenue.
 1909. M'Cance, James, 302, Antrim Road.
 1913. M'Cance, Captain Stoupe, 4 Markham Square, London, S.W. 3
 1921. M'Bride, J., 1 Adelaide Street
 1921. M'Callum, Major J. D. M., C.B.E., D.S.O., B.A., 6 Windsor Avenue
 1921. M'Carthy, W. J., Ashley, Alexandra Park, Holywood
 1919. M'Caw, James, Glenfield, Donegall Park
 1884. M'Cleery, H., J.P., Oakhill, Dunmurry
 1912. M'Clelland, E. W., B.Sc., 79, Kansas Avenue.
 1921. M'Connish, John, Benmore, Strandtown
 1903. M'Connell, Miss, Stranmillis House.
 1879. M'Connell, James, J.P., Stranmillis House.
 1921. M'Cullagh, Miss J. J., 8 Cardigan Drive
 1921. M'Cullagh, Miss S., 8 Cardigan Drive
 1917. M'Devitt, H., 115 High Street, Holywood
 1913. M'Dow, H. Miss, 36 North Parade
 1918. M'Dowell, R., 86 University Street
 1921. M'Gilkey, F., 8 Wellington Place
 1921. M'Glavery, R., The Brickworks, Springfield Road
 1917. M'Hoy, R. J., 32 Pandora Street
 1921. M'Ilwaine, J. E., M.D., 26 College Gardens
 1914. M'Kay, Miss E. W., B.Sc., Ardbana Terrace, Coleraine.
 1904. M'Kean, E. John, B.A., B.L., Heathfield, Old Cavehill Road.
 1920. M'Kee, Miss F. V., Ashley, Charnwood Avenue.
 1920. M'Kee, Miss Eva K., Ashleigh, Charnwood Avenue
 1921. M'Kee, Joseph, 60 Clonlee Drive, Strandtown
 1906. M'Kinney, Miss, Sentry Hill, Carnmoney.
 1921. M'Laine, Lechlan, Rathaline, Annadale Avenue
 1921. M'Laine, R., 42 College Park Avenue

1912. McMeekin, Miss A. M., Sunnyside, Carnmooney, Co. Antrim
 1917. McMeekin, A., J.P., Cogry House, Deagh
 O McMillan, W., J.P., 30, Ashley Avenue.
 1920. McNeill, Mrs., Lackabeg, Knockdene Park

 1921. Neill, F. F., 35 Candahar Street
 1921. Niblock, J. B., 208 Cliftonville Road
 1921. Niblock, Mrs., 208 Cliftonville Road

 1898. Orr, James, 17, Garfield Street.
 1921. Osborne, T. Edens, F.R.S.A.I., 4 College Square, North.
 1921. Osborne, Miss M. B., 11 Marine Parade, Holywood

 1921. Paton, John, Ardmore, Bangor
 1888. Patterson, Robert, F.L.S., M.R.I.A., M.B.O.U., Glenbank, Holywood.
 1921. Patterson, W. H. F., Auburn, Donaghadee
 1921. Parkes, W. J., "Wannsee," Barnett's Road, Knock
 1921. Parkes, Mrs., "Wannsee," Barnett's Road, Knock
 1921. Parkes, Miss Lillian, "Wannsee," Barnett's Road, Knock
 1921. Parsons, Thomas, Farm Hill, Marino
 1867. Pim, John, J.P., Bonaven, Antrim Road.
 1869. Pim, Joshua, Rathbawn, 12 Adelaide Park
 1903. Pim, W. R., Lisnagarvey, Lisburn.
 1903. Pooler, Rev. Chas. K., D.D., M.R.I.A., D.Litt., Carnbin, Whitehouse
 1890. Porter, F. A., 13 Queen's Square
 1890. Porter, W., Beechview, Balmoral Avenue
 1921. Porter, Miss May, do.
 1921. Porter, Miss Edith, do.
 1883. Praeger, R. Ll., B.A., B.E., M.R.I.A., Nat. Library, Kildare St., Dublin
 1921. Pyper, James, B.A., 30 Cranmore Avenue

 1901. Rankin, Will, 26 Derryvolgie Avenue
 1904. Rankin, Mrs., 26 Derryvolgie Avenue
 1907. Rea, Miss M. W., Salem House, Sydenham
 1916. Rea, Miss L. C., Salem House, Sydenham
 1921. Reid, John, 5 Eglantine Gardens
 1921. Reid, Mrs., 29 Rosetta Avenue
 1921. Reid, Jas., B.Sc., Holywood
 1919. Reilly, Geo. C., Greenholme, Carrickfergus
 1921. Reynolds, Miss Doris L., Queen's University
 1907. Riddell, Mrs., Grosvenor, Glastonbury Avenue
 1921. Riddell, Alexander, 12 Lower Crescent
 1903. Robb, H. M., 44 Ulsterville Avenue.
 1921. Roberts, J. R., 43 Fitzwilliam Street
 1921. Robinson, W. R., 58 Ravenhill Park
 1921. Robinson, Miss L., 16 Kingsmere Avenue
 1921. Robson, Mrs., 81, Wellington Park.
 1921. Rossington, Rev. H. J., M.A., B.D., Ardeevin, Cadogan Park
 1921. Rumley, J. D., Winston, Marlborough Park North
 1909. Russell, Nelson, Strathmore, Lisburn.

 1899. Sandes, Robert, Chorlton, Adelaide Park
 1913. Savage, W. E. J., 8 Lincoln Avenue.
 1917. Sayers, Miss W., B.A., Bartragh, Knock
 1920. Sayers, Miss J. B., Bartragh, Knock.
 1918. Seymour, J., Inchmarlo, Marlborough Park
 1921. Shanks, Edward, 13 Donegall Square, West

1921. Shaw, Miss Louie Hinton, 72 Cromwell Road
 1911. Shaw, G. W., Ulster Bank, York Street
 1905. Shiels, Rev. J. F., P.P., Saintfield
 1921. Shiels, Edward, Summer Hill, Bangor
 1921. Shortt, James, Wilmont, Lisburn
 1921. Sinclair, Robert, 48 Waring Street
 1890. Skillen, Joseph, Largymore, Lisburn.
 1920. Small, Professor J., D.Sc., Queen's University
 1921. Smith, W. S., 7 Adelaide Park
 1921. Spencer-Smith, C. F., Friends' School, Lisburn
 1921. Squire, Miss E. Lousie, Roselands, Lansdowne Road
 1921. Stanley, Major Rupert, B.A., M.I.E.E., F.I.R.E., Municipal College
 of Technology, Belfast
 1921. Steed, George G., 13 Donegall Square West
 1921. Steel, David L., 141 Cavehill Road
 1893. Steele, Miss, Dooneen, Marlborough Park.
 1921. Steen, Rev. David, B.A., The Manse, Islandmagee
 1910. Stelfox, Mrs. A. W., B.Sc., A.R.C.Sc.I., 14 Clareville Road, Rathgar,
 Dublin
 1911. Stendall, J. A. S., The Museum, College Square North
 1904. Stephens, Captain J. Kyle, J.P., 13 Donegall Square North
 1921. Stevenson, Miss E., Inverarnan, Cyprus Park, Bloomfield
 1921. Stewart, A. W., "Belfast Telegraph," Belfast
 1894. Stewart, W. J., 11 Elgin Street
 1919. Strain, W., Windsor Park

 1921. Tate, Jas., M.P.S.I., 7 and 9 Royal Avenue
 1920. Tedley, Miss, Rosetta School, Belfast
 1921. Thomas, J. Leigh, J.P., Downshire Road, Bangor
 1921. Thomas, Mrs. J. Leigh, Downshire Road, Bangor
 1921. Thompson, S. B., J.P., Piney Ridge, Malone Road
 1921. Thompson, Joseph, Altorf, Holywood Road
 1921. Thompson, Wm., Lauriston, Derryvolgie Avenue
 1921. Thomson, Richard, Cable Road, Whitehead
 1921. Todd, R. G., 1 Mount Easton, Cliftonville
 1875. Traill, W. A., M.A., F.R.S.A.I., Ing, Bushmills, Co. Antrim
 1921. Trumble, Dr. Andrew, M.B., D.P.H., J.P., Tyr-owen, Downview Av.
 1921. Turner, S., jun., 142 Cliftonpark Avenue
 1904. Turtle, W. Haydock, Lumeah, Malone Road.
 1909. Turtle, Mrs. N. S., Rosemount, Knock.

 1893. Walker, W. J. D., C.B., The Sycamores, Drogheda.
 1917. Walker, Franklin M., Mount Royal, Whitehead.
 1920. Walker, Mrs., Mount Royal, Whitehead
 1920. Ward, Miss Alice, Albert Villa, Sydenham.
 1921. Ward, Francis E., Ridgeway Street, Stranmillis Road
 1921. Ward, George, 21 Cranmore Avenue
 1919. Warnock, Miss, 24 Cromwell Road
 1921. Watkins, Rev. M., 4 Bathgate Drive, Strandtown
 1921. Watts, Mrs., Tiverton, Upper Newtownards Road
 1909. Watson, John G., The Maples, King's Road, Knock
 1921. Watson, Frank, The Hamlets, Strandtown
 1921. Watt, Miss Anna, 622, Ravenhill Road.
 1920. Weston, Wilfred W., 14 Donegall Square West
 1921. White, Chas. E., 219 Cavehill Road
 1921. White, George Chatsworth, Balmoral
 1877. Whitla, Sir William, M.D., J.P., M.P., Lennoxvale House, Belfast
 1917. Williamson, James, J.P., Sandown Park, Knock
 1893. Wilson, George, 17 Bedford Street

1901. Wilson, Prof. Gregg, M.A., D.Sc., O.B.E., M.R.I.A., Ardenza,
King's road
1904. Wilson, Mrs., Ardenza, King's Road,
O Workman, Rev. R., M.A., Crusheen, Cadogan Park
1901. Workman, W. H., F.Z.S., M.B.O.U., Lismore, Windsor Avenue

Junior Members.

1921. Bulla, Alan C., Rydal, Lisburn Road
1921. Blake, F. R. D., 4 Knock Road
1921. Gibson, C. Ward, Silverton, Earlswood Road
1920. Crawford, Maurice Orissa, Marlborough Park
1920. Crawford, Ronald, do.
1922. Crawford, Jack, do.
1921. Mulligan, Miss J., Rosetta N.S.
1918. Mc'Carthy, Miss Daisy, 4, Ardlee Terrace, Holywood
1918. Mc'Carthy, Desmond, 4, Ardlee Terrace, Holywood.
1918. Quick, Geoffrey G., 17, Rossmore Avenue.
1918. Quick, Kenneth J., 17, Rossmore Avenue.
1921. Rea, John H., 17 Queen's Parade, Bangor
1921. Walshe, Joseph, 50 South Parade, Ormeau Road
1921. Walshe, W. W., do.



BELFAST NATURALISTS' FIELD CLUB.

SIXTIETH YEAR, 1922-23.

GENERAL COMMITTEE.

President :

REV. W. R. MEGAW, B.A.

Vice-President :

J. A. S. STENDALL, M.B.O.U.

Hon. Treasurer :

T. EDENS OSBORNE, F.R.S.A.I., 4 COLLEGE SQUARE N., BELFAST.

Hon. Librarian :

W. M. CRAWFORD, B.A., F.C.S., F.E.S., MARLBOROUGH PARK, BELFAST.

Hon. Sec. Botanical Section :

S. A. BENNETT, B.A., B.Sc.

Hon. Sec. Geological Section :

R. BELL, F.M.N.S.

Hon. Sec. Zoological Section :

W. A. GREEN, F.R.S.A.I.

Hon. Sec. Archæological Section :

A. ALBERT CAMPBELL, F.R.S.A.I.

Hon. Sec. Junior Section :

J. R. H. GREEVES.

Ordinary Members of Committee :

Retire 1923.

N. Carrothers.
T. W. Deans, LL.D.
D. Elliott, B.A.

Retire 1924.

S. M. Macoun.
Miss S. Blackwood.
Prof. J. K. Charlesworth,
D.Sc., M.R.I.A.

Retire 1925.

F. Adens Heron, D.L., J.P.
A. Percy Hoskins, F.I.C.,
F.C.S.
Wm. Porter.

Hon. Secretary :

A. M'L. CLELAND, GREEN ROAD, KNOCK, BELFAST.

Reduced Prices of Proceedings.

In accordance with resolution passed at General Meeting held on 28th April, 1911, the following reductions have been made in the prices of Proceedings, &c., to Members of the Club. When the stock has been sufficiently reduced prices will be raised again.

Proceedings, without Appendices, Series II., Vol. I. (1873-74 to 1879-80) to 2 6 per vol.				
"	"	"	"	" II. (1881-82 to 1886-87) to 2 6 "
"	"	"	"	" III. (1887-88 to 1892-93) to 2 6 "
"	"	"	"	" IV. (1893-94 to 1900-01) to 2 6 "
"	"	"	"	" V. (1901-02 to 1906-07) to 2 6 "

The prices quoted above are for complete volumes, but any separate part may be had for 6d.

Appendices, Vol. I.	..	In Leather Binding	..	to 5/- per vol.
" I.	...	In Paper Binding	..	to 3 6 "

Separate Appendices, which in covers are priced 6d and 1s, may be had in loose sheets at 1d and 2d per copy respectively. (This does not apply to Nos. 4 and 7 and 8 of Vol. II., of which we have no surplus.)

Flora of North-East Ireland, by Stewart and Corry, with Supplement. 2/6 per vol.

The following Publications of the Club can be had from the Librarian.

Eighth Annual Report—1870-71, containing Appendix II., List of Irish Liassic Foraminifera—Wright; and List of the Fossils of the Estuarine Clays of Antrim and Down—Stewart	2/6
Ninth Annual Report—1871-72	1/-
Tenth do. 1872-73	1/-
Proceedings, Series II., Vol. I., Part I., 1873-74, containing Appendix III., List of Mosses of North-East of Ireland—Stewart; and List of Cretaceous Microzoa of North of Ireland—Wright, 2 Plates	2/6
„ Series II., Vol. I., Part II., 1874-75	1/-
„ „ „ III., 1875-76	1/-
„ „ „ IV., 1876-77, containing Appendix IV., Recent Foraminifera of Down and Antrim—Wright, 1 Plate; and Silurian Rocks of Co. Down—Swanston and Lapworth, 3 Plates	2/6
„ Series II., Vol. I. Parts V. and VI., 1877-78 and 78-79 (in one)	1/-
„ Part VII., 1879-80., containing Appendix V., List of Post-Tertiary Foraminifera of North-East Ireland—Wright; and List of Mollusca of Boulder Clay of North-East of Ireland—Stewart	2/-
„ Series II., Vol. II., Part I., 1880-81, containing Appendix VI., List of Foraminifera of South Donegal—Wright; Sponge Remains from Carb. Limestone, County Sligo—Wright; and Fossil Sponge-spicules, County Sligo—Carter, 1 Plate	1/6
„ Series II., Vol. II., Part II., 1881-82	1/-
„ „ „ III., 1882-83, containing Appendix VII., Supplemental List of Mosses of the North-East of Ireland—Stewart	1/-
„ Series II., Vol. II., Part IV., 1883-84, containing Appendix VIII., Notes on Irish Coleoptera—Halliday; Cromlechs of Antrim and Down—Gray, 12 Plates; and Prehistoric Monument near Sligo—Elcock, 4 Plates	3/-
„ Series II., Vol. II., Part V., 1884-85, containing Appendix IX., Ostracoda of Belfast Lough—Malcolmson; Fungi of North of Ireland—Lett; Foraminifera of “Protector” Cruise, &c.—Wright; Cretaceous Foraminifera of Keady Hill—Wright; Irish Coleoptera—Patterson	3/-
„ Series II., Vol. II., Part VI., 1885-86, containing Appendix X., The Ferns of Ulster—Phillips and Praeger	2/-
„ Series II., Vol. II., Part VII., 1886-87., containing Appendix XI., Notes on the Sections exposed at the Alexandra Dock, Belfast, with List of Fossils, 1 Plate—Praeger	2/-
„ Series II., Vol. III., Part I., 1887-88, Containing Appendix XII., Marine Shells of the North of Ireland—Praeger	2/6
„ Series II., Vol. III., Part II., 1888-89	1/-
„ „ „ III., 1889-90, containing Report of Larne Gravels	2/-
„ Committee, 2 Plates...	1/-
„ Series II., Vol. III., Part IV., 1890-91	1/-
„ „ „ V., 1891-92	2/-
„ „ „ VI., 1892-93	2/-
„ Index	6d
„ Series II., Vol. IV., Part I., 1893-94, containing Appendix XIII.	2/-
„ „ „ II., 1894-95, „ „ XIV.	2/-
„ „ „ III., 1895-96 „ „ XV.	2/-
„ „ „ IV., 1896-97	1/-
„ „ „ V., 1897-98	1/-
„ „ „ VI., 1898-99	2/-
„ „ „ VII., 1899-1900, 1900-01 (in one)	2/-
„ „ „ Vol. V., Parts I. and II., 1901-02, 1902-03 (in one)	2/-
„ „ „ Part III., 1903-04	1/-
„ „ „ IV., 1904-05	1/-
„ „ „ V., 1905-06, with Appendices XVI. and XVII.	2/-
„ „ „ VI., 1906-07, with Index	1/6
„ „ „ Vol. VI., Part I., 1907-08.	1/6
„ „ „ II., 1908-09	1/6
„ „ „ III., 1909-10	1/6
„ „ „ IV., 1910-11, with Appendices I. & II. of Vol. III.	2/-
„ „ „ V., 1911-12	1/-
„ „ „ VI., 1912-13, with Title Page & Index to Vol. VI.	2/-
„ „ „ Vol. VII., Part I., 1913-14, with Report of 50th Anniversary	2/-
„ „ „ II., 1914-15	1/6
„ „ „ III., 1915-16	1/6
„ „ „ IV., 1916-17	1/6
„ „ „ V., 1917-18, with Title Page and Index to Vol. VII., and Appendix III. of Vol. III.	2/-
„ „ „ Vol. VIII., Part I., 1918-19	3/-
„ „ „ II., 1919-20	2/-
„ „ „ III., 1920-21	2/-
„ „ „ IV., 1921-22	2/-

Some of the above are now available to Members at reduced prices.